Children's Fishing Pond
Project Development Grant

UPPER CLARK FORK RIVER BASIN
RESTORATION GRANTS

2008 GRANT CYCLE

Submitted By:
Skyline Sportsmen's Association
And
Butte – Silver Bow City–County Government

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Step 1. Applicant Information and Project Summary Form

1. Name of Applicant(s) Skyline Sportsmen's Association & Butte-Silver Bow Government

2. Project Title Children's Fishing Pond Project Development

3. Type of Entity* Consolidated City-County Government (BSB will be lead agency)

4. **Description of Project Location** The primary area of interest, referred to as the Hillcrest site, is located within the urban area of Butte. The site is located at the junction of I-90 and I-15 on the east side of the city. (Figure 1) The area contains approximately 60 acres of undeveloped county-owned land.

5. Injured Natural Resource(s) and/or Impaired Services to be Restored, Rehabilitated, Replaced or Equivalent Acquired through Project A children's fishing pond in Butte will replace lost fishing services. The natural area surrounding the pond will replace other lost recreational services such as hiking, biking, and bird-watching.

6. Authorized Representative: **Paul Babb** **BSB Chief Executive**
(Name) (Title)

Mailing Address: **155 West Granite St.**
(Street/PO Box)
Butte, MT 59701 **406-496-6221**
(City/State/Zip) (Telephone)

Contact Person*: **John Trudnowski** **Skyline Sportsmen's Secretary**
(Name) (Title)
Cindy McIlveen **BSB Planning Specialist**
(Name) (Title)

Mailing Address*: **126 West Granite St.**
(Street/PO Box)
Butte, MT 59701
(City/State/Zip)

Phone: **406-497-6265**

E-mail Address: **cmcilveen@bsb.mt.gov**

7. Proposed Funding Sources

2008 Application		Amount in ($) Dollars			Funding Percentage (Subtotal/Estimated Total Project Cost)
Funding Source		Cash Matching Funds	In-kind Matching Funds	Subtotal	
A.	**UCFRB Restoration Grant Fund Request**			$25,000	41%
B.	Butte-Silver Bow	$4,750		$4,750	8%
C.	NPS-RTCA		$25,000	$25,000	41%
D.	Skyline Sportman Assoc.		$1,800	$1,800	3%
E.	Montana Tech		$4,680	$4,680	8%
F.					
G.					
H.					
In-kind Total			$31,480		51%
Cash Total		$4,750			8%

9. Private (non-Governmental) Grant Applicant Financial Information

a. Are there any lawsuits, judgments, or obligations pending for or against you? **N**
b. Have you ever declared bankruptcy? **N**
c. Are any of your tax returns delinquent or under dispute? **N**
d. Any unpaid deficiencies? **N**
e. Are you a party to a lawsuit? **N**
f. Do you have any other contingent liabilities? **N**
g. Do your current and deferred liabilities exceed the value of your assets? **N**

Explain all YES answers in a statement attached to this form.

10. Certification for Individuals or Private Entities NA

11. Authorizing Statement

Grant Authorization

I hereby declare that the information included in and all attachments to this application are true, complete, and accurate to the best of my knowledge, and that the proposed project complies with all applicable state, local, and federal laws and regulations.

I further declare that, for **Butte-Silver Bow Government** (Project Sponsor), I am legally authorized to enter into a binding contract with the State of Montana to obtain funding if this application is approved. I understand that the Governor must authorize funding for this project.

Butte-Silver Bow City-County Government
Project Sponsor

8/4/08
Date

Authorized Representative (signature)

Chief Executive
Title

81-0368698
Fed Tax Id. No.

Step 2. Proposal Abstract

Applicant Name: Skyline Sportsmen's Association and Butte-Silver Bow Government

Project Title: Children's Fishing Pond Project Development

The citizens of Butte have identified the need for a Children's Fishing Pond in the community. The Upper Clark Fork River Basin lost fishing and other recreational services due to past mining activities. A fishing pond and surrounding natural area will not only replace lost fishing services, but will replace other recreational services including hiking, biking, dog-walking, and bird and wildlife watching. The creeks that run through town that have not been contaminated are primarily on private land so access for fishing is very limited. After several years of research and comparing site options, a preliminary location was chosen as the preferred area. The site is located north of the junction of I90 and I15 just east of Continental Drive and is referred to as the Hillcrest area.

The 60-acre Hillcrest area is owned by Butte-Silver Bow (BSB) and is currently undeveloped. The area is heavily used as an informal open space park by bicyclist, hikers, ATV and motorbike riders, hang gliders and dog walkers. A perennial stream flows through the south end of the property. A local nonprofit, Skyline Sportsmen's Association and BSB would like to convert this land to a natural, open space park with a Children's fishing pond.

The funds requested in this application are for the completion of a site feasibility study and site master plan of the Hillcrest area. Preliminary data suggests that the water quality is good and the amount of water should be sufficient, but further data is needed to verify this and to determine if all other aspects of the site are favorable for a fish pond. The master plan will provide the needed detail to proceed with the public approval process and acquiring construction funds. The master plan will also indicate what level of service will be required and associated operations and maintenance costs.

The grant request is for $25,000 from the Natural Resource Damage Program with $36,230 in matching funds for a total project cost of $61,230. The project will begin immediately after funding is available in fall, 2008 and will continue into the spring, 2009. Skyline Sportsmen and BSB will co-manage the project with support from numerous local organizations including Montana Tech and the National Park Service's Rivers, Trails, Conservation and Assistance Program (RTCA). Other groups which have committed their support or desire to participate include: Hillcrest Elementary, National Center for Appropriate Technology, Montana Hang Gliding Association, Highlands Cycling, Mining City Trail Riders, Clark Fork Watershed Education Program, Northern Rockies Outdoor Center, and the YMCA. This project will be a true community effort resulting in the development of fishing opportunities for the Children in Butte.

Step 3. Technical Narrative

Applicant Name: Skyline Sportsmen's Association and Butte-Silver Bow Government

Project Title: Children's Fishing Pond Project Development

A. Project Location

The site is located at the eastern junction of Interstates 15 and 90 adjacent to Hillcrest Elementary School, National Center for Appropriate Technology, Continental Gardens Senior Living, and Butte Convalescent/Chemical Dependency Center. (Figures 1&2) The area consists of undeveloped lands with a perennial stream that runs from the East Ridge, under Interstate 15.

Figure 1 - Site Location – Hillcrest Site, Butte, MT

Figure 2 - Hillcrest Natural Area

Hillcrest Natural Area /Butte-Silver Bow property
Stream/Riparian Area

B. Project Need / Problem

Butte does not have any fishing opportunities for children within the urban area. The community has identified that families need a place to take a child fishing that is easy to get to, relatively safe and offers the best possible chance of fishing success. A local Sportsmen's group, Skyline Sportsmen's Association, has spearheaded recent efforts to develop a children's fishing pond in Butte. They have been working with city-county staff for several years to determine a location. Two small creeks that flow through Butte, Blacktail creek and Basin creek, do support limited fisheries, but they run primarily through private land. Silver Bow Creek, which flows through the west side of Butte, has been severely damaged by past mining activities and does not currently support viable fisheries. Because close urban recreational fishing opportunities are not available to local residents, the Natural Resource Damage Program staff ranked a fishing pond as a high

priority in their 2005 Silver Bow Creek Watershed Restoration Plan**.** This project will replace lost recreation opportunities associated with past mining in the area.

Butte – Silver Bow owns approximately 60 acres on the east side of Butte located in an area referred to as the Hillcrest neighborhood. The county maintenance shops were located on the west portion of the land until the late 70's when they were relocated to the area behind the civic center. Since then, the area has remained mostly undeveloped and has been used by the public as an informal recreation site for hikers, bikers, dog walkers, hang gliders, ATV riders and motorbike riders. The area provides access to the Burlington Northern railroad and an area known as the East Ridge, east of Interstate 15; which provides access to other open space lands and National Forest lands and trails to hike including the Continental Divide National Scenic Trail.

The area receives undesirable use that includes uncontrolled off-road use by vehicles, dumping and teen drinking. The natural resource features have deteriorated. This includes changes in stream channel and function from motorized use, vandalism, unmanaged vegetation communities, noxious weeds, and erosion from unmanaged motorized use. Restoring the riparian habitat will benefit not only the resource, but also provide an opportunity for outdoor education for youth at the Hillcrest Elementary School adjacent to the park. Establishment of a trail system and obliteration of unwanted trails will benefit the public by providing a marked trail area that will improve recreation opportunities and protect vegetation from off-road use. The area is used by Hillcrest Elementary School students who live in the East Ridge area to travel to/from school. This project will provide a safe route for students to/from school. During the design, input will be evaluated to determine whether motorized use by dirt bikes can or should continue in a controlled environment or moved to another location. Other opportunities include a non-motorized bicycle course.

Public comments during both the BSB Parks and Recreation master planning process and the growth policy update, expressed a desire to rehabilitate and utilize this area as a natural park. The project development grant will enable Skyline Sportsmen's and Butte-Silver Bow to investigate the option of developing this Hillcrest property as a natural area enhanced with a fishing pond, trails, and restoration of vegetation as well as restoration of the perennial stream and riparian area.

C. Project Goals and Objectives

The goals of this project are to determine the feasibility of the Hillcrest site for a children's' fishing pond, and if found favorable, complete a site master plan. The site was chosen because the needed components for the fishing pond are likely present on site. This includes a clean, cold water source, adequate volume of water, and appropriate environmental setting. The site master plan is important not just for construction planning, but for attaining strong community support and for securing future funding. The objectives to accomplish each goal are listed below.

Goal 1: **<u>Feasibility Study</u>** – The first goal of the project is to complete a feasibility study for the construction of a children's fishing pond at the Hillcrest area.

Objectives:

1) **Determine water quality**
2) **Determine water quantity**

3) **Soil Assessment**
4) **Site assessment**
5) **Land Acquisition**
6) **Assess short-term and long-term costs**

Goal 2: **Site Design** - The second goal is to design a site plan for the Hillcrest area

Objectives:

1) **Approval from City-County Officials to Proceed**
2) **Public Input, Community Outreach and Education**
3) **Conceptual Planning**

D. Implementation Plan

The approach to the planning process is very open with numerous partners and extensive community involvement. BSB staff and Skyline Sportsmen members will co-manage this project and oversee both the feasibility and design stages. The Skyline Sportsmen's Association has already donated many hours of volunteer time developing the project and has committed to continue their volunteer assistance. They secured donated engineering services and analytical data for water quality sampling. They arranged for Montana Tech to provide preliminary research on potential site locations. They will assist in the public relations strategy of the project, provide input on design and fisheries, and provide possible funding.

Feasibility

The feasibility phase consists primarily of data collection and will be performed by Montana Tech geophysics and hydrogeology departments. They have offered to conduct several tests, including seismic and electrical, in the area to help determine the water table. The hydrogeology department with assistance from the Clark Fork Watershed Education Program will assist in water sampling and monitoring of both surface and ground water. The remaining work, including piezometer installation and sample chemical analyses will be contracted.

The upper portion of the watershed of the creek flowing through the site is currently undeveloped and borders National Forest System lands. Both FWP fisheries and wildlife staff have expressed interest in protecting the watershed. BSB will approach landowners to find out if they are willing to sell or donate their property to the project. If there is interest, appraisals, title work and possibly options to purchase will be acquired.

BSB is currently undergoing a Master Parks, Recreation, Open Space and Trail plan for the county. The plan will outline costs for various levels of service of parks from swimming pools to open space. From this information, we can determine an approximate annual operations and maintenance cost. The construction costs will be estimated based on the size of the pond and surrounding natural area features desired.

Design

BSB has applied for planning help through the Rivers, Trails, Conservation and Assistance Program (RTCA). The program is offered through the National Park Service and provides conceptual planning, project development, community outreach and education services. The services are awarded in late fall, but the RTCA staff feels BSB will have an excellent chance of receiving the grant. This program is the same one provided to the Milltown Working Group for the site conceptual planning of the park at the dam removal location. The RTCA staff will assist in the site analysis as well as the public outreach and education. They will sponsor the design charrette and work with all project partners to complete a site master plan.

A landscape architect graduate student from the University of Arizona has chosen this Hillcrest project for a master's thesis study area. She has visited the site and BSB has been working on negotiations with her advisor. Funds from this proposal will go towards providing her with a graduate research assistantship. A cost savings is realized by hiring a student as it is far less expensive than hiring consultants to perform this work. She will continue with site visits late fall of 2008 and work with the RTCA staff on site analyses throughout the winter. She will then develop a written *design program* (a list of proposed features, needs, and restrictions) for design development. The thesis is reviewed her advisor throughout the process to ensure her work meets both the requirements of the thesis program and BSB's needs. Survey maps of all existing conditions including topography, structures, vegetation, fencing, and other existing elements will be collected during the fall. A conceptual master plan will be developed during the winter with presentations of the designs at a mid and near-final stage. The final Master Plan will be completed in Spring 2009. It will specify materials and a layout plan. It will not be a legal contract or construction drawing. However, it is likely that the drawing will be adequate for site construction with expert site supervision by construction experts. In the event that contract drawings are required, these must be prepared by a licensed landscape architect and are not part of the scope of services for this project development grant.

Because this is a project development grant, most of the uncertainties regarding the fish pond feasibility and design will not be identified until the results of the project are available. If the surface water and ground water is not clean or the amount is insufficient, plans will have to be changed to investigate pumping from a well to augment supply. Depending on the amount of water pumped daily, water rights may need to be acquired. Preliminary investigations show the surface water is clean and the ground water appears to be quite shallow. Other unknowns include Council of Commissioners acceptance of setting aside this acreage as open space. The Chief Executive, the Council, and the Parks and Recreation Board approved this preliminary study. Public comments from both the growth policy update and the parks master plan have been extremely favorable and the Council typically responds to the public desires. However, the one obstacle is that the land will be taken out of residential development. There have been several failed attempts to develop a residential subdivision in the area. Each time the area was up for development, there was strong public opposition. Butte's severely depressed economy leads some community leaders and developers to reason that the area must be subdivided to provide housing and thus tax revenue. Numerous studies exist showing that natural areas such as the one proposed can be more valuable to the city that the potential tax base, especially given the fact that Butte currently does not have any impact fees. RTCA assistance will include helping BSB educate the public and city officials on the values added to communities by natural areas, open space, parks and trails. The BSB planning department is strongly advocating keeping and even acquiring open space lands now rather than being faced with, like so many other communities, the position of buying back these lands later.

Goal 1: **<u>Feasibility Study</u>** – The first goal of the project is to complete a feasibility study for the construction of a children's fishing pond at the Hillcrest area.

Objectives:

1) Determine water quality

Task 1: Surface water sampling and chemical/physical analyses – to determine if the surface water is clean.
Task 2: Drill and install piezometers – to measure both water quality and quantity
Task 3: Groundwater sampling and chemical analyses - to determine if the ground water is clean.

2) **Determine water quantity**
   - Task 1: Perform monthly flow monitoring - to determine the year round flow rate of the surface water flowing on-site to answer if we have sufficient surface flow to feed the pond.
   - Task 2: Monitor Piezometers – to determine groundwater depth and flow direction to determine potentiometric surface (water table).
   - Task 3: Seismic survey - conduct shallow seismic survey to determine approximate water table

3) **Soil Assessment**
   - Task 1: Soil Sampling – to determine if the pond will need to be lined to prevent infiltration if fed primarily from the stream rather then groundwater.

4) **Site assessment**
   - Task 1: Evaluate stream reconstruction needs
   - Task 2: Perform vegetation analysis
   - Task 3: Select potential pond size and location

5) **Land Acquisition**
   - Task 1: Evaluate upstream land acquisition need for watershed protection.
   - Task 2: Contact landowners on willingness to sell
   - Task 3: Secure appraisals, title work, and options to purchase.

6) **Assess short-term and long-term costs**
   - Task 1: Estimate construction costs
   - Task 2: Estimate annual O&M costs

Goal 2: **<u>Site Design</u>** - The second goal is to design a site plan for the Hillcrest area

Objectives:

1) **Approval from City-County Officials to Proceed**
   - Task 1: Parks and Recreation Board approval
   - Task 2: Planning Board approval for use designation
   - Task 3: Public Works / Parks & Recreation Dept. Approval for O&M
   - Task 4: Chief Executive and Council of Commissioners approval

2) **Public Input, Community Outreach and Education**
   - Task 1: Meet with adjacent neighbors and businesses
   - Task 2: Hold public information meetings
   - Task 3: Work with Hillcrest school staff and students on education plan

3) **Conceptual Planning**
   - Task 1: Host a Design Charrette
   - Task 2: Create site master plan
   - Task 3: Secure funds for construction

E. Time Schedule

	Oct 08	Nov 08	Dec 08	Jan 09	Feb 09	Mar 09	Apr 09	May 09	Jun 09	Jul 09	Aug 09	Sep 09	Oct 09
Goal 1 Feasibility Study													
Objective 1: Determine water quality													
Task 1: Surface Water Sampling	x	x											
Task 2: Install Piezometers	x	x											
Task 3: Groundwater Sampling	x	x											
Objective 2: Determine water quantity													
Task 1: Flow monitoring	x	x	x	x	x	x	x	x	x	x	x	x	x
Task 2: Monitor groundwater level	x	x	x	x	x	x	x	x	x	x	x	x	x
Task 3: Seismic survey	x	x											
Objective 3: Soil Assessment													
Task 1: Soil Sampling	x	x											
Objective 4: Site Assessment													
Task 1: Stream reconstruction analysis	x	x	x	x	x	x	x	x	x	x	x	x	x
Task 2: Vegetation analysis	x	x											
Task 3: Pond size and location				x	x								
Objective 5: Land Acquisition													
Task 1: Assess land needs	x	x	x										
Task 2: Contact landowners	x	x	x										
Task 3: Appraisals, Title, Options				x	x								
Objective 6: Short-term and long-term costs													
Task 1: Construction Costs				x	x								
Task 2: Annual O&M Costs				x	x								
Goal 2: Site Design													
Objective 1: City-County Approval													
Task 1: Parks and Recreation Board				x									
Task 2: Planning Board approval			x	x									
Task 3: Public Works / Parks & Recreation Dept.					x								
Task 4: Chief Exec and Council of Commissioners					x								
Objective 2: Public Input, Outreach and Education													
Task 1: Meet with adjacent neighbors and businesses		x	x	x									
Task 2: Hold public information meetings		x	x	x									
Task 3: Work with Hillcrest school staff and students		x	x	x									
Objective 3: Conceptual Planning													
Task 1: Host a Design Charrette					x								
Task 2: Create site master plan					x	x							
Task 3: Secure funds for construction					x	x	x	x					

F. Qualifications of the Project Team

The project team is comprised of numerous members with various backgrounds so only the lead personnel are described below

John Trudnowski - Secretary, Skyline Sportsmen's Association- BS. Geological Engineering
Mr. Trudnowski is a Senior Geological Engineer, PE with Water and Environmental Technologies in Butte. He has many years experienced in engineering and project management in both ground and surface water systems. He will provide general engineering oversight for the project and will serve as liaison for the Skyline Sportsmen's Association.

Cindy McIlveen – BSB Planning Specialist – BS, MS Geology
Ms. McIlveen has several years experience in project and grants management, including several NRDP grants. She will oversee all aspects of the project related to BSB Planning, Public Works, and Parks and Recreation Departments. Her geology background will enable her to assist Mr. Trudnowski with the feasibility data collection and interpretation. She will serve as the project coordinator.

G. Supporting Technical Documentation

All supporting documentation is located in the appendices.

Step 3. Criteria Statements

Applicant Name: Skyline Sportsmen's Association and Butte-Silver Bow Government

Project Title: Children's Fishing Pond Project Development

1. Relationship of Expected Costs to Expected Benefits

Benefits: The project will plan for a replacement of lost fishing and other recreation services. It will enhance the area by providing a plan to rehabilitate an area that has been long neglected and to provide a fishing option for children in Butte. The area is located at the junction of Interstates 15 and 90 that provides a visual entrance to Butte. There will be an indirect benefit of having a visually appealing natural area, with a fishing pond, visible to visitors on their way into Butte will help offset the past and active mine operations and scarred landscape that exist throughout the city. In addition, rehabilitating riparian habitat and providing native vegetation to other areas, will increase bird habitat and ultimately bird watching opportunities.

The proposed site design phase of the project includes a substantial amount of public involvement and outreach. There is a proven benefit that involving the neighbors, surrounding businesses and the general public will ensure a successful plan. Future rehabilitation of this area will address the desires of the community to provide positive recreation opportunities for neighborhood youth as well as other people who regularly use this area. The project will provide designation of a safe route to/from the Hillcrest Elementary School. It will also actively involve students from the school to participate in the site planning. Cumulatively it will assist to instill an environmental ethic and appreciation for future rehabilitation of lands in Butte.

Costs: The costs of the project development total $62,730 with only $25,000 requested from NRDP. The benefits of having a properly researched and designed the site far outweighs the relatively small cost of the plan. NRDP is being asked to support only 41% of the overall project. The benefits mentioned above far outweigh the cost of the planning grant due to the improved life of Butte's residents. Including additional expenses to ensure proper public participation is crucial for the success of the project and is minimal when compared to the benefit of strong support. A complete feasibility study will provide a more cost effective construction project as resource issues and concerns will have been addressed prior to construction and should not result in unforeseen cost increases during construction.

2. Cost Effectiveness

Alternatives to achieve the goals of completing a feasibility study of the Children's Fishing Pond includes the No Action; which will not complete the feasibility study for a Children's Fishing Pond. This alternative will not meet the goal of identifying a suitable site for a fishing pond and provide needed rehabilitation for the riparian area and adjacent undeveloped land. The public will still have unmanaged access to the area, continuing inappropriate behavior and damage to riparian and stream habitats. Natural recovery of the area will be diminished as the stream and adjacent riparian area will continue to be degraded from unmanaged use of the area by motorized vehicles. Efforts to control this use have been unsuccessful due to the uncontrolled access to the area.

The proposed alternative best meets the project goal of completing a feasibility study that will coincide with a site design grant that was applied for with the National Park Service. The site design will identify the additional amenities and alternatives for stream and riparian rehabilitation in coordination with the NRDP grant. The Children's Fish Pond is the focal point for development of the Hillcrest Area to provide a natural open space recreation area for the Butte

community. Recovery of the area will be enhanced from this project as it will coincide with a site design to provide for rehabilitation of the area and control unmanaged motorized use in the area. The site design will include improvements to control access of full-size and recreation vehicles. The proposed project will include analysis to acquire additional lands east of the Hillcrest Area that will increase protection of the watershed and stream resources; and provide for additional open space recreation opportunities. Acquisition of lands will increase the potential for trail connections to the Continental Divide, Maud S Canyon, and Our Lady of the Rockies.

A second alternative to the proposed action will be to pay for the feasibility study from BSB general funds. At this time, this alternative will not be feasible due to the limited funds available and other priority needs of the City-County. A proposal will have to be submitted during the budget process that will begin in April 2009. If approved the project will be delayed an additional year as the budget will not be approved until late August 2009. The proposed project, funded through NRDP, will provide the necessary funds to complete the water and soil analyses. BSB will provide the technical support and coordination as identified in the budget. The second alternative will not fall within the timeline proposed with the National Park Service grant that, if awarded, to complete a site design for the Hillcrest Natural Area. The fish pond is the primary feature identified for development with associated amenities to provide for recreation opportunities.

There is no alternative to scale back the proposal as the soil and water tests are necessary to determine the feasibility to construct the fishing pond. Any reduction in testing will not provide an adequate study of the soil and water conditions of the area. If tests were scaled back and a decision was made to move forward with construction plans of the fish pond there is the potential of unforeseen issues that could arise during the construction period. This could ultimately cause delays in the project and cost more due to the need for further testing and redesign.

Alternative sites were evaluated as potential fish pond locations. In 2007 a study was conducted to analyze potential sites in Butte for a fishing pond. The report is included in Appendix A. Four sites around the community of Butte were identified, which included the Hillcrest property, Sisters of Charity property to the north, Blacktail Creek behind the Butte Mall, and Chamber of Commerce. The objective of the analysis was to determine which site will be best suited for the construction of a fish pond. The four sites were placed into a decision matrix and ranked on four issues: accessibility, cost, safety and environmental conditions. Based on the analysis the Hillcrest property was identified as the most suitable due to it accessible location, safety aspects, and there was no known soil or water contamination. Initial water sampling confirmed the water quality of the area. The other proposed sites were either in too close proximity to mine contamination or near streams or both. FWP prefers not to have fishing ponds near streams with fisheries due to potential introduction of undesirable species. The stream on the Hillcrest site terminates on site and thus there is no risk of species contamination downstream.

BSB owned several of the parcels evaluated, so no purchase price was involved. However, the cost to haul toxic soils away offset any savings by owning the land. At this point, no other alternative locations are being proposed for the feasibility analysis. The Sisters of Charity ranked second in the analysis. The property is located adjacent to the Hillcrest property; however it is privately owned and will have to be purchased. This site was not considered as desirable due to the unknown willingness of the owner to sell the property. To date the organization has not shown interest in selling the property to any potential buyer.

3. Impacts to the Environment and Human Health and Safety

The project proposes to complete a feasibility study to determine the ability to construct a fishing pond for youth in the Hillcrest area. This will be accomplished by conducting water sampling of ground and surface water quality, flows and soil sampling. There will be minimal disturbance during this testing process. Ground disturbance will consist of boreholes drilled approximately 20 feet deep to monitor ground water and take soil samples. No other ground disturbance will occur for this proposal.

The area is an undeveloped parcel of land located on the southwest corner of the intersection of Interstates 15 and 90. The land has a perennial stream that flows from the east side of Interstate 15 (East Ridge). Vegetation consists of willows, shrubs, sage, and some grasses. Noxious weeds are located on the land. The land is used primarily by residents to walk and access the East Ridge and Burlington Northern Railroad. Uncontrolled motorized use occurs, consisting of dirt bikes and All Terrain Vehicles (ATVs). There are several trails in the area that receive heavy use by motorized users. There are erosion issues primarily during spring runoff on trails that are not properly designed or protected. There is motorized use that crosses the stream and wanders through the riparian vegetation causing damage to the area.

Based on the feasibility study the project has the potential to improve riparian and stream habitats by restoring proper stream function and re-establish vegetation. Trails will be redesigned to route the public on desirable routes to provide for recreation opportunities both in and adjacent to the area, trails rehabilitated to eliminate erosion concerns and rerouted away from sensitive areas. Noxious weeds will be treated and native vegetation re-established.

At this time there are no other reasonable alternatives that were identified to address the feasibility study due to the lack of ground disturbance and potential impacts to the environment. If the Hillcrest feasibility study is positive, potential environmental effects of construction of the fish pond and associated amenities will be identified as part of the feasibility analysis in preparation for a construction grant.

Analysis of the potential to acquire additional open space lands to increase protection of the watershed and stream resources will have no direct impact to human health and safety. In the long term, if lands on the East Ridge can be acquired it will provide for improved aquatic protection as the land will not be developed for residential or commercial use. This will also protect wildlife resources along the East Ridge and provide for recreation opportunities that includes trail development.

Safety impacts have primarily involved Hillcrest Elementary School, which is located adjacent to the proposed fishing pond. The school has indicated their support of the project concept; however they want to be included in planning to discuss safety with students using the Hillcrest area to travel to/from school from the East Ridge area. They also have expressed there support for using a fish pond and natural area for environmental education, but the environment must be safe for kids. They will be involved in all fencing and trail designs surrounding the school to ensure it meets their safety concerns. Children's fishing ponds are designed for children and their safety will always be a top concern. Examples of safe children's fishing ponds exist all across the country.

4. Public Support

The public has identified a Children's Fishing Pond as a priority for the Butte Community. Skyline Sportsmen's assisted with conducting preliminary analysis along with a Montana Tech group to assess four potential sites. During 2006 and 2007 presentations were made to several groups including Project Green, Butte Restoration Alliance, Butte-Silver Bow Parks and Recreation Board, and Montana Hang Gliding Association. Hillcrest Elementary School is

located adjacent to the property. A meeting was held with the school offficials to determine their support of the project. The school is in support of the concept of the fishing pond along with improvements to the natural area which include rehabilitation of the riparian area and treatment of noxious weeds. They are interested in the design of the pond and safety for students living east of Interstate 90 and use the area to travel to/from school.

BSB is in the process of completing a Comprehensive Master Plan for Parks, Trails, Open Space and Aquatics. Several meetings have been held with stakeholders, Parks and Recreation Board, and the general public. The concept of a Children's Fishing Pond has been brought up among each of these groups and something that will be good for Butte's youth. One of the issues consistently brought up is that there is nothing for pre-teens and teens to do for recreation. At one of the public meetings the public was divided into small groups and asked to design their 'ideal' park. Many of the groups used the Hillcrest Area as their ideal park and included in the concept was a fishing pond.

BSB is also in the process of completing their 20 year Growth Policy Update. The Growth Policy has proposed the Hillcrest Area be identified as Open Space land. Public meetings in the area were held to gather public comments to the Plan to determine the public's acceptance of land use designations. During the public meetings there was support from the public to designate this area as Open Space. Ideas for improvements were identified by the public that included development of a fishing pond, landing zone for hang gliders, and designated trails to control unmanaged motorized use of the area.

A 2006 Outdoor Recreation Study identified the need for more development of parks and amenities that provide for youth activities. The Study and public meetings have also identified the public's desire for additional trail connections and opportunities in the urban area. Trail connections that have been identified by the public include the Continental Divide, Maud S Canyon, Rails with Trails on the Burlington Northern, and Our Lady of the Rockies.

The Montana Hang Gliding Association has offered matching funds if the area can be secured as a landing zone for hang gliders in this area. They have received positive feedback from the U.S. Hang Gliding Association regarding this project. The National Center for Appropriate Technology (NCAT), an adjacent property owner, has expressed interest in partnering with BSB in this planning process. NCAT currently has plans to xeriscape their property adjacent to the Hillcrest natural area and hopes to combine efforts with BSB to rehabilitate the entire area. Other groups that have indicated their interest and willingness to participate include Trout Unlimited, Clark Fork Watershed Education Program, Highland Cycling Club, Mining City Trail Riders, and neighborhood residents. Their involvement will be with the site design process and in particular how to address motorized/non-motorized uses in the area. Local residents have also expressed an interest in participating in developing this area to enhance their neighborhood. The school district has expressed their desire to partner for future O&M cost through their "Hooked on Fishing, not Drugs" program. They will also help with the outreach portion of the project.

As mentioned earlier, the public participation that has occurred has been extremely favorably to the proposed Hillcrest site enhancements. As part of this project, BSB will be actively seeking more public participation and support through public information meetings, public design workshops, council of commissioners' public meetings, and press updates through the local media. The BSB Growth Policy Update is in the final adoption stages and has received overwhelming support for the land use designation change from residential to open space.

5. Public Access

The existing public access to the Hillcrest Area is uncontrolled from several points on the east, north, and west side. Uncontrolled access includes use of full-size and recreation vehicles that

crosses other adjacent private lands to enter the Hillcrest Area. High speeds and trespass is an issue identified by local residents. The public, through meetings for the Park Master Plan and County Growth Policy, have identified the need for additional access and recreation opportunities along the Burlington Northern Railroad, access to other local trails (Maud S Canyon and Continental Divide), and control of unmanaged motorized access to the Hillcrest area specifically.

This project, in conjunction with the National Park Service grant, will identify design features to access points that will address motorized use and access to the area. This will include features to designate parking area and design of trails that will require slow speeds by recreation vehicles to pass through or, if approved, use of the area in a controlled setting. The project will also analyze the feasibility of providing additional access to open space lands that will be developed with trails that will access other points of interest including the Continental Divide, Maud S Canyon, and Our Lady of the Rockies.

STEP 5. PROPOSAL BUDGET

Applicant Name: Skyline Sportsmen's Association and Butte-Silver Bow Government

Project Title: Children's Fishing Pond Project Development

2008 Application		BUDGET SUMMARY FORM				
	EXPENSE CATEGORY	UCFRB RESTORATION FUND	MATCHING FUNDS			TOTAL
			Cash	In-Kind	Subtotal	
1	SALARIES AND WAGES		$3,790.00	$1,800.00	$5,590.00	$5,590.00
2	FRINGE BENEFITS		$960.00		$960.00	$960.00
3	CONTRACTED SERVICES	$23,800.00		$29,680.00	$29,680.00	$53,480.00
4	SUPPLIES AND MATERIALS	$1,200.00				$1,200.00
5	COMMUNICATIONS					
6	TRAVEL					
7	RENT AND UTILITIES					
8	EQUIPMENT					
9	MISCELLANEOUS					
	TOTAL	$25,000.00	$4,750.00	$31,480.00	$36,230.00	$61,230.00

2008 Application		BUDGET DETAIL FORM				
	EXPENSE CATEGORY	UCFRB RESTORATION GRANT FUND	MATCHING FUNDS			TOTAL
			Cash	In-Kind	Subtotal	
1	SALARIES AND WAGES (List all worker salaries)					
	BSB Staff		$ 3,790.00			
	Skyline Sprotsman Assoc.			$ 1,800.00		
	Insert Row					
	SALARIES AND WAGES SUBTOTAL		$ 3,790.00	$ 1,800.00	$ 5,590.00	$ 5,590.00
2	FRINGE BENEFITS					
	BSB Employees		$ 960.00			
	Insert Row					
	FRINGE BENEFITS SUBTOTAL		$ 960.00		$ 960.00	$ 960.00
3	CONTRACTED SERVICES (LIST BY TYPE)					
	National Park Service			$ 25,000.00		
	Univ of Arizona L.A.	$ 7,800.00				
	Engineering Services	$ 13,000.00				
	Appraisals/Options	$ 3,000.00				
	Montana Tech			$ 4,680.00		
	Insert Row					
	CONTRACTED SERVICES SUBTOTAL	$ 23,800.00		$ 29,680.00	$ 29,680.00	$ 53,480.00
4	SUPPLIES AND MATERIALS	$ 1,200.00				
	Insert Row					
	SUPPLIES AND MATERIALS SUBTOTAL	$ 1,200.00				$ 1,200.00
5	COMMUNICATIONS					
	Insert Row					
	COMMUNICATIONS SUBTOTAL					
6	TRAVEL					
	Insert Row					
	TRAVEL SUBTOTAL					
7	RENT AND UTILITIES					
	Insert Row					
	RENT AND UTILITIES SUBTOTAL					
8	EQUIPMENT					
	Insert Row					
	EQUIPMENT SUBTOTAL					
9	MISCELLANEOUS					
	Insert Row					
	MISCELLANEOUS SUBTOTAL					
	ALL CATEGORIES SUBTOTAL	$ 25,000.00	$ 4,750.00	$ 31,480.00	$ 36,230.00	$ 61,230.00

Matching Funds

BSB Public Works Dept. commits staff time towards project development, project coordination, community outreach and any other roles staffing is necessary. Cindy McIlveen, Planning Specialist and Bob Rowling, Parks and Recreation Director, will be dedicated as necessary to the project. BSB support staff includes our GIS specialist and administrative staff. Resources BSB will provide include office supplies, computer equipment, GIS data, meeting space, and meeting materials. The county attorney's office will be available for liability and legal questions if needed. The BSB Planning Department will assist in necessary zoning changes and land designation issues.

BSB is requesting assistance from the RTCP to develop a site design for the Hillcrest Park. BSB does not have a landscape architect on staff. Assistance from RTCP will enable BSB to complete a site plan in which to seek funding from NRDP to complete construction drawings, rehabilitation and development work. The RTCA staff will assist with outreach including facilitating public meetings to develop the plan for the area that will identify a trail system and trail obliteration, stream and riparian area restoration, hang gliding land zone, and interpretation opportunities. RTCP staff quoted their services to be valued at $25,000.

Montana Tech assistance for water sampling and geophysical analyses is valued at approximately 20 people (2 entire classes) for 24 hours for a total of 240 donated volunteer hours. A couple of students and professors are also conducting some independent work for an additional 72 hours. A value of $15/hour was used for average volunteer wages for an in-kind match of $4680. Skyline Sportsmen will contribute $1800 in in-kind labor (120 hours @ $15/hr).

NRDP Funds

A landscape architect graduate student from the University of Arizona has chosen the Hillcrest site to for her thesis study area. The NRDP grant will help pay her travel costs and a stipend. The opportunity to work with the RTCP professionals will be a valuable experience for her. To hire a consultant to do what the student will do will cost between $80-$100/hour. She is working approximately 300 hours on the project for around $7800. A landscape architect consultant would cost close to $30,000.

The grant will also be used to investigate the purchase of other open space properties on the East Ridge that will provide continued protection of watershed stream and riparian habitats and additional recreation opportunities and additional recreation. $3000 is requested for appraisals, title work, and possible purchasing options to buy the property. It is unknown if the landowners will sell their property, but funds are requested in the event that they are willing to sell.

The majority of the requested funds are for site sample analyses and piezometer installation. A detailed estimate of these costs is provided in Appendix C.

In-Kind BSB Match													
	Hours Charged to Job	days	Base Wage	Health & Welfare	Workmen Comp. 6.57% Adm 5.94 union	PERS, 6.938%	FICA 6.2%	Medicare, 1.45%	Unemploy-ment, 0.55%	Total Benefits	Base wage x hours	Benefits x hours	Total Match
Dan Dennehy	10	1.25	$28.80	$3.64	$1.89	$2.00	$1.79	$0.42	$0.16	$9.89	$288.00	$98.92	
Bob Rowling	30	3.75	$24.26	$3.64	$1.59	$1.68	$1.50	$0.35	$0.13	$8.91	$727.80	$267.19	
Cindy McIlveen	60	7.5	$21.19	$3.41	$1.39	$1.47	$1.31	$0.31	$0.12	$8.01	$1,271.40	$480.60	
Other Professional	15	1.875	$19.00	$3.64	$1.25	$1.32	$1.18	$0.28	$0.10	$7.76	$285.00	$116.47	
Other Administrative	15	1.875	$11.00	$3.64	$0.72	$0.76	$0.68	$0.16	$0.06	$6.03	$165.00	$90.42	
Total Support Costs	**130**										**$2,737.20**	**$1,053.59**	**$3,790.79**

APPENDIX A

Children's Fishing Pond
Site Comparison Study

APPENDIX B

Hillcrest site water sample results

APPENDIX C

Site investigations costs estimate

APPENDIX D

Fishing Ponds Inc.

Transmittal

Kids' Fishing Pond for Butte, MT

Dear Cindy McIlveen:

Attached is the final report for possible locations for a kids' fishing pond in Butte. Fishing Ponds Inc. determined the Butte-Silver Bow owned property located behind NCAT to be the best location for a fishing pond.

The following report includes the final assessment of each of the four proposed sites: NCAT Site, Chamber of Commerce Site, Butte Plaza Mall Site, and Sisters of Charity Site. The report will provide information for the development of the grant proposal for the Natural Resource Damage Program.

The accompanied presentation will help you to better understand Fishing Ponds Inc.'s final recommendation for the location of the Butte Kids' Fishing Pond, scheduled for 11:00 am on Tuesday, April 24. Thank you for this opportunity. It has been a pleasure working with you.

Sincerely,

Fishing Ponds Inc.

Schylar Canfield _____ Date _____

Joel Jacobson _____ Date _____

Ross Schwend _____ Date _____

Laura Griffis _____ Date _____

FISHING PONDS INC.

TO: Dr. Bill Macgregor, Technical Writing Professor, Montana Tech

FROM: Fishing Ponds Inc.

DATE: April 24, 2007

SUBJECT: Final Report

Attached is the final report for possible locations of a Butte Kids' Fishing Pond. Fishing Ponds Inc. determined the BSB property located behind NCAT to be the best location for a fishing pond. A second alternative for BSB is the Sisters of Charity site.

The following report includes the final assessment of each of the four proposed sites: NCAT, Chamber of Commerce, Butte Plaza Mall, and Sisters of Charity. The report will provide Cindy McIlveen of the Butte-Silver Bow Planning Department with much need information to develop a grant proposal. The proposal will be submitted to the Natural Resource Damage Program, which, upon successful receipt of the proposal, may provide BSB with money to perform soil analysis and groundwater tests on the recommended site.

_____

Fishing Ponds Inc.

Schylar Canfield
Joel Jacobson
Ross Schwend
Laura Griffis

Kids' Fishing Pond for Butte, Montana

Prepared for: **Cindy McIlveen, Butte-Silver Bow Planning Department and**

Dr. Bill Macgregor, Montana Tech

Prepared by: **Fishing Ponds Inc.**
Schylar Canfield
Laura Griffis
Joel Jacobson
Ross Schwend

ENGR 3210
Scientific and Technical Writing
Dr. Bill Macgregor

April 24, 2007

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EXECUTIVE SUMMARY

Cindy McIlveen of the Butte-Silver Bow (BSB) Planning Department requested Fishing Ponds Inc. research possible locations for a kids' fishing pond within Butte, Montana. Information in this report will be used to develop a preliminary research grant proposal and submitted to the Natural Resource Damage Program. The grant proposal will provide money to aide BSB in conducting additional research on issues such as water source and quality, soil and groundwater characteristics, and pond management for the recommended alternatives.

Four sites were analyzed and compared by Fishing Ponds Inc. to determine which site is best suited for the construction of a fish pond. The four considered sites were placed into a decision matrix and ranked on safety, accessibility, total cost, and environmental conditions. Using the results from the decision matrix, Fishing Ponds Inc. determined the best site to be the National Center for Advanced Technology (NCAT) property, located in eastern Butte. The site offers a safe and accessible location for the construction of the Butte Kids' Fishing Pond. There is no known soil or water contamination in the area, and is projected to have the lowest total construction cost.

A second alternative to the NCAT site is the Sisters of Charity site. This site has the same advantages as NCAT and has similar site characteristics (since it is adjacent to NCAT). However, BSB does not own this land; they would need to purchase the land from the Sisters of Charity if this site is chosen for pond construction.

1.0 INTRODUCTION

The following report discusses the use of various properties for the development of a kids' fishing pond in Butte. Fishing Ponds Inc. accepted the project at the request of Cindy McIlveen from the Butte-Silver Bow (BSB) Planning Department. This report will provide Cindy with the research needed to develop a grant proposal for the Natural Resource Damage Program (NRDP). BSB plans on spending no more than $2 million on the project, most of which will be grant money (McIlveen, email).

Four sites for the possible location of a kids' fishing pond in the Butte area were considered. The four considered sites include: BSB property behind the National Center for Advanced Technologies (NCAT), Sisters of Charity property, BSB property near the Chamber of Commerce, and the Blacktail Creek property behind the Butte Plaza Mall. Figure 1 shows the four proposed pond sites.

Figure 1: Butte Aerial—Fishing Ponds Inc.'s four proposed pond locations in Butte are illustrated here.

Each site was analyzed on the basic requirements of a fishing pond, as well as the feasibility of each proposed site. The sites were analyzed on criteria which included accessibility, environmental conditions, safety, and total cost. Fishing Ponds Inc. ranked each site on the previously mentioned items in a decision matrix and made a final recommendation for the location of the Butte Kids' Fishing Pond.

2.0 CONCLUSION AND RECOMMENDATIONS

After researching the four potential pond sites in Butte, Fishing Ponds Inc. recommends the NCAT site be the location of the Butte Kids' Fishing Pond. Based on research and design criteria, NCAT is the best candidate for a preliminary NRDP research grant proposal. The Sisters of Charity site is BSB's second-best alternative for the location of the Butte Kids' Fishing Pond. This site has many of the same site characteristics and advantages as NCAT; however it is not owned by BSB.

A decision matrix provided an adequate ranking system for the four locations under consideration for a kids' fishing pond. The decision matrix ranked each location from best to worst (4 to 1, respectively) in various design criteria, as seen in Table 1. The highest point total determined the best location for the Butte Kids' Fishing Pond.

Each site was ranked on accessibility according to number of access points, proximity to residential areas, and proximity to existing walking trails and public throughways. Total cost was derived from ownership of each property, known real estate value, availability, and other site-specific costs. Each site was analyzed for safety based on proximity to high-traffic areas, surrounding neighborhoods, and interstate highways. Environmental conditions were considered for each site's known characteristics including soil and water quality, existing ground and surface water supply, and federally protected wetlands.

Table 1. Decision Matrix for Potential Pond Locations

SITE	NCAT	SISTERS	CHAMBER	MALL
ACCESSIBILITY	3	2	4	1
TOTAL COST	4	3	2	1
SAFETY	4	3	1	2
ENVIRONMENTAL CONDITIONS	4	3	1	2
TOTALS	**15**	**11**	**8**	**6**

Table 1 illustrates Fishing Pond Inc.'s decision matrix for each location based on accessibility, total cost, safety, and environmental conditions. The NCAT site ranks the highest in Fishing Ponds Inc.'s decision matrix. This site is easily accessible to the public, provides a safe environment, has the lowest total cost, and has the lowest potential for hazardous environmental conditions such as water and soil contamination. Also, the site is owned by BSB and is not a Superfund site; this makes the NCAT site most affordable. The site covers roughly 60 acres, and will provide a large area for further recreational development. NCAT is very accessible due to its use as a recreational area for dirt bikers and hang gliders; many people use this area to walk their dogs or play Frisbee. This site can be accessed from Continental Drive and is located next to Hillcrest Elementary School.

According to the decision matrix, the Sisters of Charity property is the second-best alternative for the location of a fishing pond. This property is also easily accessible to the public and provides a safe environment for children. This site has no known

environmental hazards. However, this property will be more expensive than NCAT because it is not owned by BSB. The purchasing cost of this property is unknown, which makes it a less-desirable alternative for the construction of a fishing pond.

Fishing Ponds Inc. determined the Chamber property and the Blacktail property to be the least desirable alternatives for the pond location. The Chamber site provides great accessibility, but has added cost because of existing wetlands in the area and extensive soil and water contamination. Also, there are safety concerns for children because of the site's proximity to Interstate 90.

The Blacktail Creek property is accessible only through the Butte Plaza Mall parking lot, must be purchased by BSB at a cost of approximately $1.2 million, and is located too close to Blacktail Creek based on the Fish, Wildlife, and Parks Standard for pond distance to surface water (FWP). Because of environmental concerns, property costs, and safety conditions, Fishing Ponds Inc. recommends BSB not use the Chamber site or the Blacktail site as locations for the construction of a kids' fishing pond.

Fishing Ponds Inc. recommends BSB conduct further research on the selected site (NCAT) following approval of a grant from the NRDP. Further research will include studies on the groundwater, surface water, geology, and soil characteristics of the proposed area.

Each research study will provide BSB with knowledge to help aide in the design of the pond. A geological study of the chosen area will determine the water source, as well as the quality of the water for the pond. BSB must also perform additional research into groundwater levels; the groundwater level will help to determine the size of the pond unless other sources of water are identified. Soils testing must be performed in and around the pond location to determine soil characteristics and the need to implement a liner to ensure no water loss through the pond.

3.0 RESULTS AND DISCUSSION

Using Fishing Ponds Inc.'s Phase One Research Report, each site was analyzed based on BSB's standards for an acceptable pond location. BSB's standards include:

- Large area (1 acre minimum for pond)
- Safe distance from surface water sources
- Centrally located (within three miles of residential area)
- Safe for children
- Sufficient water supply

Fishing Ponds Inc. chose each of the four potential locations because they are centrally located, provide sufficient area to support a pond, and have site characteristics which are desirable for a pond. BSB found all locations selected by Fishing Ponds Inc. acceptable for further investigation.

3.1 Choosing an Appropriate Site

Phase one of this project included researching and outlining the basic requirements of a fishing pond. The basic requirements for the construction of a pond included preliminary investigation, construction, and revegetation requirements as well as stocking and harvesting practices, wildlife habitat development, and pond management. BSB must obtain the appropriate water rights and permits prior to the construction of the proposed pond. The constructed pond must have surface area of at least 1 acre, and have a depth of 10-15 feet. Adequate vegetation must be established for one year prior to any fish introduction. Fishing Ponds Inc. also recommends the pond be stocked with West-Slope Cutthroat Trout. For further detail into the basic requirements for a fishing pond, see Appendix A.

3.2 Individual Site Characteristics

Fishing Ponds Inc. considered each of the four sites for a potential location of a fishing pond. All sites are located within the Butte city limits and have access points for the public. Below is an analysis of each site.

3.2.1 Blacktail Site

The Blacktail property is located directly east of the Butte Plaza Mall, south of Interstate 90, and north of the Butte Country Club Golf Course, as seen in Figure 2. The property is currently owned by Shelia Clark, Sherrie Byrns, and Dorothy Chapman, and has a total area of 10.74 acres. The listed property price is $1.2 million (Dwyer). This price would not provide BSB with adequate funding for the construction costs of a fish pond, as the budget is $2 million. John Trudnowski spoke to John Dwyer of Shea Realtors during the week of January 12th, 2007 about a possible land-swap with the city. Mr. Dwyer then spoke to the property owners, and the owners are willing to split the property, but want $600,000 for a 5-6 acre section (Trudnowski).

The property is located in central Butte. However, it is only accessible from a single entrance adjacent to the mall. The proposed recreational area will not be easily attached to the existing walking trail, which connects to other trails throughout the city. The trail would need to be extended from Harrison Avenue to the property or a sky bridge could be constructed over the interstate that would extend from Father Sheehan Park to the property.

The location of a power line, which currently runs through the center of the property, is a potential hazard to contractors and the public. If the location were chosen for the construction of a pond, the power line must be removed and buried as it could be struck by pond construction equipment or a child flying a kite.

Blacktail Creek borders the eastern edge of the property. Any proposed pond on this property would be located too close to Blacktail Creek (FWP). When constructing a

fishing pond, Montana Fish Wildlife and Parks (FWP) recommends no introduction of any pond species into a natural creek or waterway. In order to prevent undesired introduction, the pond would need to be located near the western edge of the property. If the pond were moved to the western edge of the property, there still would be no guarantee that foreign species introduction into Blacktail Creek would not occur (FWP).

Recent push for development raises safety concerns with the property. It is located relatively close to the interstate and is next to the mall. Transients may be a problem in the area. There has been talk of constructing a casino or other related businesses in this area; this would produce an unsafe environment for children and may expose them to unsuitable conditions.

This property also lies in close proximity to the golf course in Butte. The golf course waters and fertilizes their grass on a regular basis, and the drainage from the golf course could run into a proposed pond. The chemicals used on the golf course will have adverse affects on the water and pond species by elevating nitrate and phosphorous levels. Refer to Appendix A for further discussion. Figure 2 shows the basic property line, power lines, Blacktail Creek, and proximity to the golf course.

Figure 2: Blacktail Site—Privately owned Blacktail property located behind the Butte Plaza Mall.

3.2.2 Chamber of Commerce Site

The location of the BSB property near the Chamber of Commerce is not an ideal location for a kids' fishing pond. This is because of the site's proximity to Interstate 90; safety could be an issue if kids were to play too close to the interstate. Currently, the only access to this property is from George Street, possibly making access to a pond more difficult. Making this area more accessible would likely require the construction of a sky-bridge across the interstate or construction of a smaller bridge across Blacktail Creek to provide access from the road directly in front of the Butte Chamber of Commerce. Adding these bridges to improve public access would greatly increase the cost of construction for this site.

Because there is already a wetland area on this site, obtaining water would not be an issue; however, the water quality on this site does not meet human health standards due to contamination from metals such as arsenic, lead, iron, and copper. See Appendix B for detailed analyses and results of samples taken in this area.

The site west of the Butte Chamber of Commerce has open space available for constructing a kids' fishing pond and a large recreational area for the public. There is also room for a parking lot and areas for picnicking, playgrounds, and other recreational activities. Although this site is centrally located, it has too many costs associated with constructing a pond. Figure 3 below shows the property characteristics of this site.

Figure 3: Chamber of Commerce Site—BSB property located adjacent to Chamber of Commerce.

A walking trail may be implemented on this site that could connect to a sky-bridge. The bridge would go over the interstate to provide increased accessibility for people traveling by bicycle or foot. A walking trail around the pond would provide easy access for outdoor enthusiasts that need a place for a peaceful walk or jog. Completely revegetating the area would make the site appear more natural and more user-friendly. Currently, there is a dirt lot bordering a wetland and the Chamber of Commerce Center. However, placing any kind of vegetation around the fishing pond could cause problems due to fertilizers that increase nitrate and phosphorous levels in the soil. Nutrients in the water will increase plant growth and could lead to depleted oxygen levels and fish kills.

A fishing pond created at this location would not be close to facilities such as restrooms. BSB would have to provide public restrooms and maintain them, which would add to the project's cost. However, any location chosen for a kids' fishing pond would require regular maintenance and involve an annual maintenance cost. Locating the fishing pond next to a place with existing public services could help keep the maintenance costs at a minimum.

Creating a fishing pond on this site would be expensive compared to the other locations considered. Extensive reclamation of this site is required prior to any pond construction, increasing liability and costs. This project's feasibility depends on what BSB is willing to spend at this location. Cindy McIlveen reported that because of the issues with soil and water quality, this site may be too expensive for constructing a kids' fishing pond.

3.2.3 Sisters of Charity Site

The land owned by the Sisters of Charity has been used in the past as open space. No organizations have completed research on this location for a possible fishing pond area. The St. James East Hospital, a branch of St. James Healthcare, was built by the Sisters of Charity in the early 1900s and covers approximately one-third of the property.

The Sisters of Charity property is located in eastern Butte, as seen in Figure 4. The size of the area owned by the Sisters of Charity is estimated to be 40 acres. This property is surrounded by land owned by the Montana Department of Transportation (DOT) and BSB. The site borders DOT property to the east and BSB property (NCAT) to the south. The north border is a community housing area. The west portion of this property is occupied by the East St. James Hospital.

The primary use for this property is recreation. Recreation includes the use of all-terrain vehicles (ATVs) and motorized and non-motorized bikes. Other uses include walking areas, recreation areas for pets, and walking paths. This site is not maintained by the City of Butte or the Sisters of Charity as it is treated as open space. There are many established roads and trails that can be utilized as walking paths around the proposed pond.

The land owned by the Sisters of Charity is very accessible to all persons by car, bike, or foot. The primary access currently used is a small road located on the NCAT property, just south of Columbia Gardens. This road is accessible from Continental Drive and extends east approximately one-quarter mile. From this point, there are many existing trails and roads currently used by the public. Proposed walking trails and pond locations for this site are shown in Figure 4.

When talking to Cindy McIlveen from the Butte Silver Bow Planning Department, our team discovered that another subdivision may be implemented on the northern border of the property. A walking trail may also be constructed along the existing railroad (known as "Rails With Trails"). The Rails With Trails could connect to the proposed pond location, offering access to the pond from multiple locations and adding property value to the current and new subdivisions.

Figure 4: Sisters of Charity Site—Privately owned property located near East St. James Hospital.

The cost of a pond on this property will be increased due to the fact that BSB does not own the land; it must first be purchased from the Sisters of Charity by BSB. It is not currently known if the property is for sale. Geology in the area may contribute to water retention problems resulting in increased costs for a liner. This site is not developed and therefore will need facilities in the area for visitors, also increasing costs for BSB.

Additional costs will exist for this property because the geology of the area is highly permeable. It is mostly composed of decomposed granite and sandy materials that have

moved from the East Ridge. Floodplain deposits composed of silts and carbonaceous shale or mud inter-mixed with sandier deposits may exist in the area (Weight). Refer to Appendix C for area well logs. Any pond built on this site will likely need a clay liner to prevent water from infiltrating back into the ground. The pond may also need infrequent dredging due to sedimentation.

Another cost associated with this site is the excavation cost to reach groundwater. Groundwater will be the only water source for this pond. Based on well logs in the area, the groundwater may be deeper than 20 feet (Groundwater Information Center). If so, wells to provide water to the pond may be needed, increasing operating costs.

Facilities such as restrooms are needed on this site if a pond is constructed. There are currently no nearby sources (within 300 feet) for drinking water or restrooms accessible to the public. These facilities will include a capital cost as well as annual maintenance costs for the site. Access to the site will need to be determined and established; a parking lot and access road may be constructed.

3.2.4 National Center for Advanced Technology (NCAT) Site

This proposed area for the Kids' Fishing Pond is located next to Intestate 15 near Hillcrest Elementary and directly behind NCAT. The property includes 66 acres of undeveloped land and is currently used for dirt biking, four wheeling, hang glider landings, and dog walking. This area is owned by BSB, so there is no cost associated with purchasing the land. However, BSB is considering purchase the Sisters of Charity land located directly to the north of the BSB property (McIlveen, meeting).

The north-western portion of this area was used as a construction waste dump in the past; BSB will need to decide if the waste is removed or kept on-site. No past research has been done with regards to placing a kids' fishing pond at this location. BSB will have to invest a large amount of time and money in order to determine if this is the best site for a community pond.

NCAT is located in a residential area of Butte. It is next to an elementary school and already has a large amount of recreational use from people in Butte. For these reasons, Fishing Ponds Inc. believes that there will be abundant community support for the proposed project. The new pond will increase property values and will be a safe place for children who live in the surrounding neighborhoods.

NCAT is situated next to Interstate 15 and is one of the first areas people see when entering Butte. The proposed pond will help Butte's image and may also increase tourism in the area because it is visible from the interstate. A "Welcome to Butte!" sign has been proposed for this site which will also help in the effort to clean the area up.

Geologically, the property is situated at the base of the East Ridge where two floodplains converge at the center of the property as seen in Figure 5. This area is prone to having flood problems in the spring. The basement of Hillcrest Elementary has flooded in the past, and during spring runoff the entire area can flood.

Surface water is present on the site due to runoff from the East Ridge. BSB needs to determine if this will be a problem or if they can use the extra surface water to fill the pond. A fault also comes to the surface at this location which allows groundwater to penetrate the surface; this increases the overall amount of surface water in the area. The property has several small hills which makes it a popular dirt biking area and a popular place for people to walk their dogs. BSB can use these natural (existing) attributes to further develop the property by incorporating these activities into a multi-use park that a family can enjoy together.

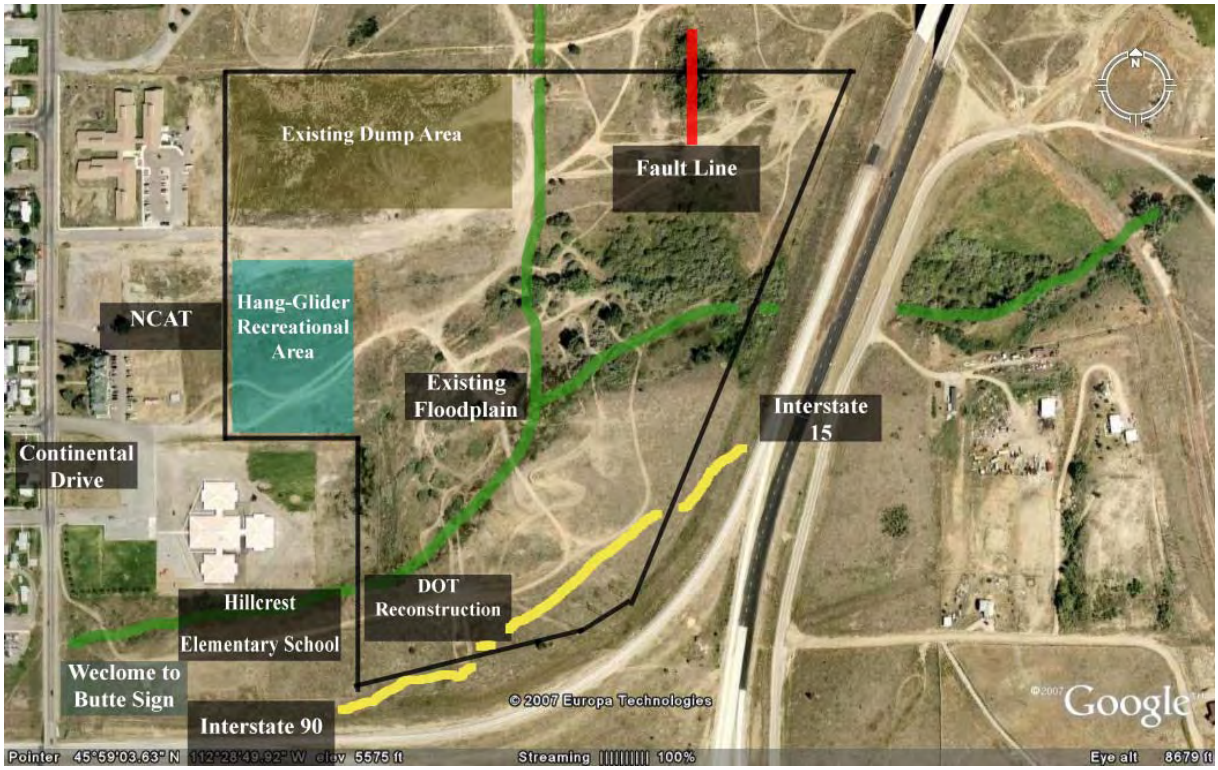

Figure 5: NCAT Site–BSB owned property located near Hillcrest Elementary School.

NCAT will have a lower cost than the other possible locations because BSB already owns the land. BSB will need to determine the construction cost of a pond–this information may be obtained from contractors in the area who are familiar with pond construction, as well as other communities around the state who already have a community pond. FWP is willing to help with the development of a pond. BSB may contact fish hatcheries in the area to determine how much stocking the pond will cost, how many fish they need, and how often stocking will occur for the proposed pond. West-Slope Cutthroat Trout are the best option for the pond because of Butte's elevation and climate (Fish, Wildlife, and Parks).

3.3 Design Considerations

Fishing Ponds Inc. recommends two of the four alternative sites for the best pond locations in Butte. The best alternative is the NCAT site and the next alternative recommended is the Sisters of Charity site. We have created a pond design for each of these sites. BSB can use the proposed designs if either location is selected for pond construction. However, we recommend BSB complete a more detailed analysis of the chosen area, as well as a comprehensive design layout prior to pond construction. Each pond has a total surface area of at least one acre and is at least 15 feet deep to meet the requirements of Fishing Pond Inc.'s phase one report and the recommendations given by FWP.

Figure 6 illustrates two potential pond locations on the NCAT property. The NCAT property is larger than the Sisters' property so there is more room for BSB to utilize when constructing a fishing pond. Both ponds are drawn either above or next to the existing floodplain; this is because the NCAT property is the lowest point of the local watershed. If the ponds were created below the floodplain there would be an increased chance of the ponds overflowing due to surface water runoff. The pond locations are placed at a safe distance away from the school, hang-glider area, and the existing industrial waste area. Creating a parking lot over the dump area would provide better public access to the ponds and seal off the area from safety hazards related to the construction waste.

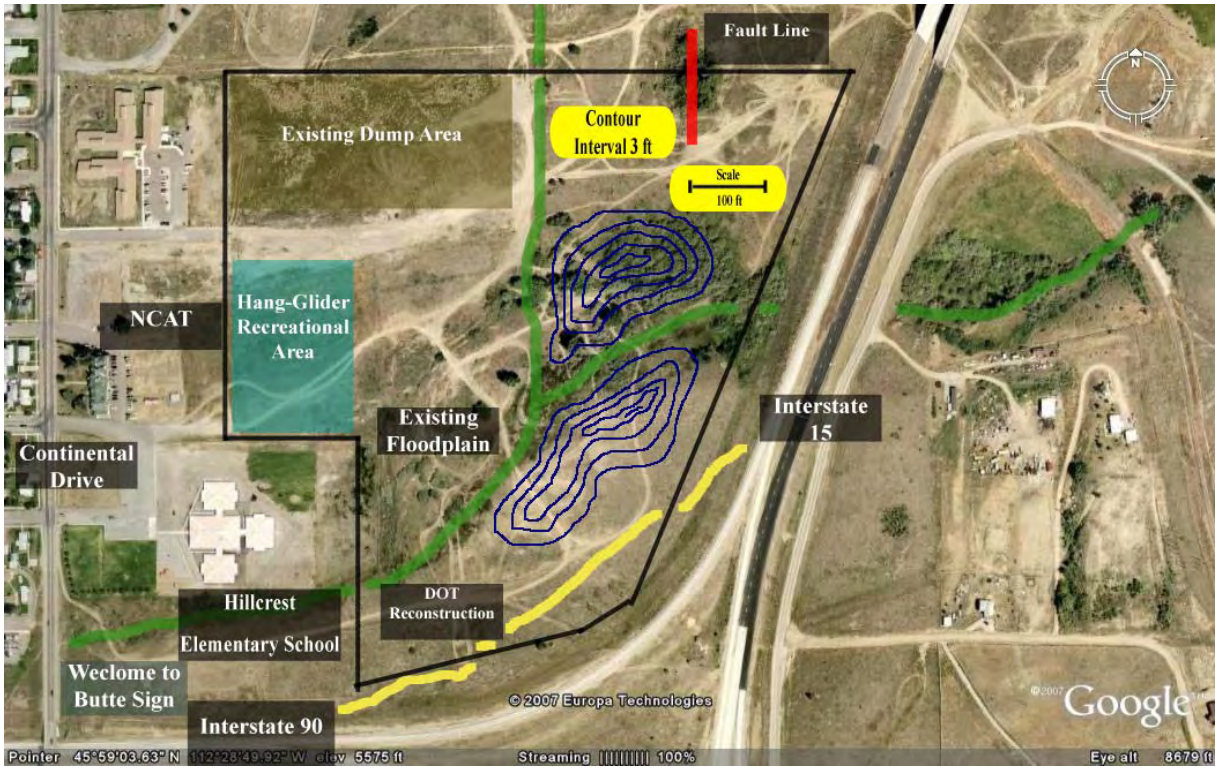

Figure 6: NCAT Pond Design—Two pond locations for the NCAT site.

Two potential pond locations on the Sisters of Charity site are shown in Figure 7. A potential water source, in addition to groundwater for the ponds, may be the existing floodplain. If the Sisters of Charity property is successfully obtained by BSB, they could connect both the Sisters' property and the NCAT property. This would give BSB enough room to create a system of ponds.

Figure 7: Sisters of Charity Pond Design—Two pond locations for the Sisters of Charity site.

4.0 REFERENCES

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McIlveen, Cindy. "RE: Fish Pond Questions." E-mail to Ross Schwend. 16 April 2007.

Montana's Groundwater Information Center (GWIC). Continental Gardens Site Report and Well Log, Tom Pomroy Site Report and Well Log. Accessed March 21, 2007. <http://www.mbmggwic.mtech.edu>

Trudnowski, John. "RE: Fish Pond Meeting Friday January 5th." E-mail to Cindy McIlveen. 12 January 2007.

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Weight, Dr. Willis. Montana Tech of the University of Montana. Email conversation. 27 Mar. 2007.

APPENDIX A

Fishing Ponds Inc. Phase One Report

Preliminary Investigation Requirements

A water right must be proven and obtained so that BSB can acquire the water needed for the kids' fishing pond. If BSB does not have the water rights, you must file an Application to Change a Water Right with the Department of Natural Resources Conservation (DNRC). Based on the dimensions of the pond (depth, volume), the pond may require more than 35 gpm or 10 ac-ft per year for supply water. This requires a Beneficial Use Permit from the DNRC as well. According to FWP, "a water right is only good as long as it is being used beneficially." This includes the use of water for a fishing pond, as it provides wildlife habitat.

BSB needs to consider how this new pond will impact down gradient water sources. Fishing Ponds Inc. recommends that BSB study the geology of the area to determine where this water source will come from, as well as the quality of the water. FWP advises that stream surface water and alluvial groundwater not be used.

Determining the size of the watershed will help to determine the amount of water available for the proposed pond. Additional research by BSB into the groundwater levels is necessary, as the groundwater level will contribute to the size of the pond unless other sources of water are identified. Based on the amount of water available for the pond, BSB can effectively determine the pond's size. A dam to impound water may be a viable option for BSB in the Kids' Fishing Pond. A dam may be needed to control and avoid water level fluctuations that contribute to negative impacts on fish due to temperature and Dissolved Oxygen (DO) changes. The DNRC requires a permit for building a dam.

Water quality is an important consideration when proposing a pond. West Slope Cutthroat Trout (the native species in the area) require high levels of DO and nutrients such as nitrogen and phosphorous. FWP has observed that groundwater fed ponds often have low levels of DO and may need added oxygen to prevent winterkill, the death of fish due to oxygen depletion in a pond. Winterkill usually occurs in areas where prolonged ice and snow cover cause aquatic plants to die off. A recirculation device is used to prevent the depletion of DO in water. This type of device totally prevents winterkill.

Nutrients sustain a pond's life. However, an overabundance of nutrients will contribute to an excess of plants and reduced DO. Temperature is also an important consideration. High temperatures stress the fish and high stress can lead to death. The optimal temperature for West-Slope Cutthroat Trout is 60 °F. At temperatures above 65 °F, Cutthroat experience stress and become susceptible to disease.

The size of the watershed and its sources of water will determine the nutrient contributions made to the pond. Both aid in determining if there will be a correct balance of nutrients to sustain life. BSB should construct the Kids' Fishing Pond so that nutrient contribution from surrounding areas such as pastures is minimized.

Fishing Ponds Inc. recommends that BSB perform soil testing and analyses because the characteristics of the watershed's soils is an important factor when analyzing a pond's

location and size. To prevent sedimentation of the pond, BSB could place vegetative cover around the pond to prevent unwanted soil from filling the pond. The soil characteristics in the pond's area are important because of water loss due to infiltration. The compatibility of the soil will determine water loss over time. We recommend using compactable soils such as clays so water will be retained and not lost.

Required permits:

Beneficial Water Use Permit (DNRC)
Certificate of Water Right (DNRC)
Application to Change a Water Right (DNRC)
318 permit (DEQ)—construction
Import permit (FWP)

These permits may be accessed and researched at: http://dnrc.mt.gov/permits.

Construction Requirements

The proposed pond must have a depth of at least 10-15 feet, with 50% of the total surface area not exceeding the maximum depth. For safety reasons it is wise to have the sides at a gradual 2:1 slope, a 3:1 one slope may be built on one side to promote a wetland area. Fishing Ponds Inc. contacted fish biologist Jason Lindberg. He recommended that 10-15% of the pond be less than 3 feet in depth for optimal plant growth. Constructing a pond with this depth and contour will help prevent winterkill.

If BSB determines that a dam is necessary, it should be at least 12 feet in width at the top to provide enough space for vehicle travel across the dam. In addition to depth and contour requirements, BSB can also implement a recirculation device as stated above. The pond should cover a total surface area of at least ½ acre but can be as large as desired. In the end, the pond size depends on the individual site location along with the construction costs.

BSB must evaluate excavation costs for the proposed pond. The majority of costs are associated with the excavation and dam construction costs. To minimize total cost it is wise to use the natural contour of the land at the proposed site. Further more, cost can be reduced if the total amount of dirt removed or added is minimized, and if the dirt dug up for the pond hole is used to construct the dam. In addition, money and time can be saved if sod and large rocks are kept. The sod can be used to revegetate the area along the banks or along the sides of the newly constructed dam, while the rocks can be placed in the pond basin to provide shelter for the fish.

Revegetation Requirements

The revegetation process is best conducted when the pond initially begins to fill. The revegetation process is essential as it provides adequate erosion control to the vulnerable banks of the pond. If BSB decides to plant other grasses and plants along the shore, BSB needs to contact the county extension office to request further information on natural grass species. Some common grasses include fescues, wheat grasses, and brome. Shrubs

may need to be planted by BSB along or near the pond. Shrubs such as snowberries and chokecherries are best suited for pond areas. Large rooted plants, such as cotton woods or aspens, are undesirable near a man-made pond because root growth can cause damage to the dam and pond basin. Willows, reeds, and rushes are often planted below the water line to promote shelter and wetland development. Cattails are usually not planted, but will eventually develop in wetland areas. When planting trees, shrubs, and grasses BSB must either use straw or a biodegradable fiber to prevent erosion of the soil in newly planted/seeded areas. Another erosion control method is applying rip-rap along the shorelines. Rip-rapping involves applying a solid material such as rocks or concrete chunks to the shoreline to prevent erosion.

Stocking Requirements

The first thing BSB should do is contact a professional fish biologist to get information regarding site specific stocking needs. This can be done through Fish Wildlife and Parks or through different hatcheries around the state.

The following fish species are prohibited in fish ponds in Montana: Grass Carp, Channel Catfish, Sauger, Walleye, Smallmouth Bass, Northern Pike, Bullhead Trout, Green Sunfish, Pumpkinseed, Shiners, Chinook Salmon, Kokanee Salmon, Lake Trout, Arctic Grayling, Whitefish, and Goldfish. Since many of these fish are warm water species, they are not a desirable option for stocking the fishing pond in Butte.

Possible species that are frequently used for fish ponds include Rainbow Trout, West-Slope Cutthroat Trout, and Brook Trout. Brook Trout are not the best option because they are predatorily and tend to overpopulate their habitat, thus causing stunted growth. Rainbow Trout and Cutthroat Trout are very similar in almost every aspect when it comes to stocking a fish pond. They are low-risk and easy to manage once they are established in an area, and both do very well in our area of the state. Since Rainbow Trout are not native to Montana, they can only be introduced into a pond if there is no chance that they can spawn with native fish and overrun the population. For this reason Fishing Ponds Inc. recommends that BSB use the native West-Slope Cutthroat Trout for a kid's fishing pond.

Habitat and Stocking

An ideal habitat for West-Slope Cutthroat Trout is a cold deep pond that is rich in nutrients and includes no other fish species. Ideal spawning conditions for the Trout are a good quality gravel bottom and an inlet stream. This promotes healthy spawning because water circulation and temperature affect spawning habits.

Stocking of fish can be done either in the fall or spring depending on the area and predator population in the region. If the fish are stocked in the spring, it allows the fish to adapt to their new home before winter. However, this allows more time for predator species such as Osprey, Eagles, Ducks, and Cormorants to potentially deplete the fish population. The opposite is true if the pond is stocked in the fall. Fishing Pond Inc. recommends BSB perform a study of the predator population in the area to determine the optimal stocking time. A general rule of thumb for stocking a fish pond is to keep the

population around 60–100 adult fish per acre. An adult West-Slope Cutthroat Trout measures between 7 and 10 inches. The fish are normally ready to spawn within a few years of introduction to the pond unless they are over-fished. It is our understanding that this will be a catch-and-release pond, so this will not be an issue.

Harvesting

If BSB determines that the fishing pond may be harvested, Fishing Ponds Inc. recommends that only adult fish be harvested. The West-Slope Cutthroat Trout usually does not grow bigger than twelve inches, so anything over ten inches is ready to harvest. Once the fish is an adult, it spawns once in its lifetime and does not have the opportunity to spawn again before death. Harvesting of the fish helps to regulate fish population growth, age, and size. Regular monitoring of the fish population by BSB is needed to establish limits for individuals who are fishing the pond.

Aquatic Nuisance Species

Aquatic Nuisance Species (ANS) are defined as any non-native plant, animal, or pathogen that poses a threat to waterways, native species, and recreation. Montana has many ANSs, which have been introduced by out of state sources. Some examples of ANSs include: Asian Carp, Round Goby, Ruffe, Tench , Egeria, Hydrilla, Eurasian Watermilfoil, Curley Pondweed, Flowering Rush, Purple Loosestrife, Salt Cedar, and Yellow Flag Iris. The best way to deal with these nuisance species is to have a good prevention program. This includes, but isn't limited to, close monitoring of the pond, strict enforcement of Montana state laws regarding introduction of species, and close monitoring of people and equipment that are around the pond.

Pond Management

Well constructed man-made fish ponds can last for hundreds of years, whereas poorly constructed man-made ponds may last less than ten years due to factors such as siltation and excessive residual nutrients. Siltation is caused by running waters which deposit earthy matter such as sand or gravel into a pond area.

<u>Pond Liners</u>

Some ponds contain liners which only last a couple of decades at the most. Ponds with liners are not only facing the issue of liner failure, but in less than 5 years ponds can suffer from weed choking and siltation. For these reasons, we recommend that BSB does not use a pond that requires a liner because the pond would have to be drained, cleaned out, and reconstructed every 5-10 years.

Water Management

The first step to controlling water quality is focusing on siltation. It is important to limit erosion and monitor the turbidity of the inflow stream. A solution to help control siltation is to use a combination of seeds and fabric or transplanted vegetation as well as fabric to help limit bank erosion. If erosion does occur, it is important to eliminate the problem right away or erosion could escalate and cost more money to repair. A good way to help control siltation is to use a flood gate to control water flow into and out of the pond; this is extremely helpful during heavy flow periods when turbidity may be high.

Managing Aquatic and Upland Vegetation
Aquatic vegetation is important to a healthy fishing pond and provides an ideal habitat for fish. However, too many aquatic plants can lead to aesthetic and water quality issues. According to the FWP, the primary method for controlling vegetation is through proper construction planning. Rooted/submerged plants grow primarily in water depths less than 10-12 feet deep. If the pond is greater than 10 feet deep, it will limit the ability for rooted plants to grow.

The encroachment of vegetation is a natural process and the amount of vegetation control needed will depend on the preferences of BSB. Rooted plants are highly competitive for nutrients and light. Human intervention is required to manually pull out unwanted plant species. Other ways of controlling vegetation include opaque plastic sheets laid over problem areas that kill plants under the covered area, lowering water levels to dry out wetland areas, or raising the water level to increase water depth. It is important to remove decaying plants because decomposing bacteria can consume oxygen as well as increase plant growth. However, rooted plants are beneficial because they absorb nutrients such as phosphorus, thus reducing undesirable algal growth.

Algal growth can be a nuisance in a man-made pond. One way to prevent excessive algal growth is to design the pond so that run-off rain/snow water does not drain into the pond. This is important because it will lower the amount of contamination in the pond from fertilizers and other ground nutrients around the pond. These contaminants can cause algal blooms and excessive vegetation growth.

Herbicides and algaecides can be alternative solutions to controlling excess aquatic plant growth. This method of treatment is undesirable as chemicals may alter the composition of the water in the pond (Ph, DO, nutrient content). It is important to remember that these chemicals must be applied by a licensed professional and BSB must notify the Department of Environmental Quality (DEQ) Water Quality Bureau before application. However, chemicals used to control aquatic vegetation are costly, require frequent applications, and could even be caustic to fish species. Fishing Ponds Inc. recommends avoiding the use of chemicals as much as possible.

Fish Management
Before introducing the selected fish species, in this case West-Slope Cutthroat Trout, BSB needs to provide at least one growing season before fish are introduced into the pond. This will help to provide establishment of a sufficient food supply as well as foliage for fish cover. A fish pond's food base includes insects, zooplankton, and invertebrates. Allowing one growing season gives the pond time to establish itself. It is important to consider fish population size because the pond can only hold a certain number of fish. Fish will grow larger if there are fewer numbers. Also, fewer fish will decrease food competition.

In addition, it is important to maintain a healthy fish population; the fewer fish species in the pond, the healthier the aquatic environment. A foreign fish species may accidentally

be introduced into the pond. If this occurs, it could be very difficult or impossible to remove them. Possible ways of controlling invading fish species include lowering the water level to allow for the netting and capturing of the unwanted species. A healthy fish pond can be maintained by controlling the numbers, sizes, and age of the fish. If larger fish are wanted, it is recommended to stock lightly and harvest/fish the pond minimally. This will enable to fish to grow to larger sizes.

Introducing foreign fish species is not only illegal but according to the FWP it can have the following effects on the pond:

- competition with native or already established species.
- behaving differently in a new habitat they may not improve and are likely to harm the fishery.
- interbreeding with established species.
- carrying and spreading new diseases and parasites.
- actually altering the existing habitat.
- raising management costs by requiring planting of more or larger fish or even chemical rehabilitation to maintain or restore the fishery. The result is less fishing opportunity and higher costs for anglers.

Phase Two of this project is in progress. Another report is scheduled to be completed by March 29, 2007. This report will include our recommendation for the best site location for a kids' fishing pond in Butte based on our findings in Phase One. If you have any questions, please feel free to contact us at any time.

Sincerely,
Fishing Ponds Inc.

References:

http://mtnmgbb.mtech.edu/courses/1/31722/groups/_888_1/_127754_1/MontanaFishandWildlifeParkFishPondInfo.pdf

http://www.aquahabitat.com/faqs.html

http://www.watergarden.com/pages/pond-algae.html

http://fwp.mt.gov/insidefwp/lakebook/lakebook.asp

http://www.ext.vt.edu/pubs/fisheries/420-011/420-011.html

http://washtenawed.org/you/pondprep.php

http://extension.unh.edu/Pubs/PubsSG/StokFish.pdf

http://www.vtfishandwildlife.com/library/Factsheets/Fisheries/Pond_Stocking_Information/Stocking_Ponds_Fact%20Sheet.pdf

http://fwp.mt.gov/fishing/fishingmontana/ANS/default.html

http://fwp.mt.gov/fishing/regulations/ponds.html

http://fwp.mt.gov/fishing/guide/stockingplan.aspx?r=2

http://www.fisheries.org/units/AFSmontana/SSCpages/westslope_cutthroat_trout.htm

APPENDIX B

Chamber of Commerce Soil and Water Sample Analyses

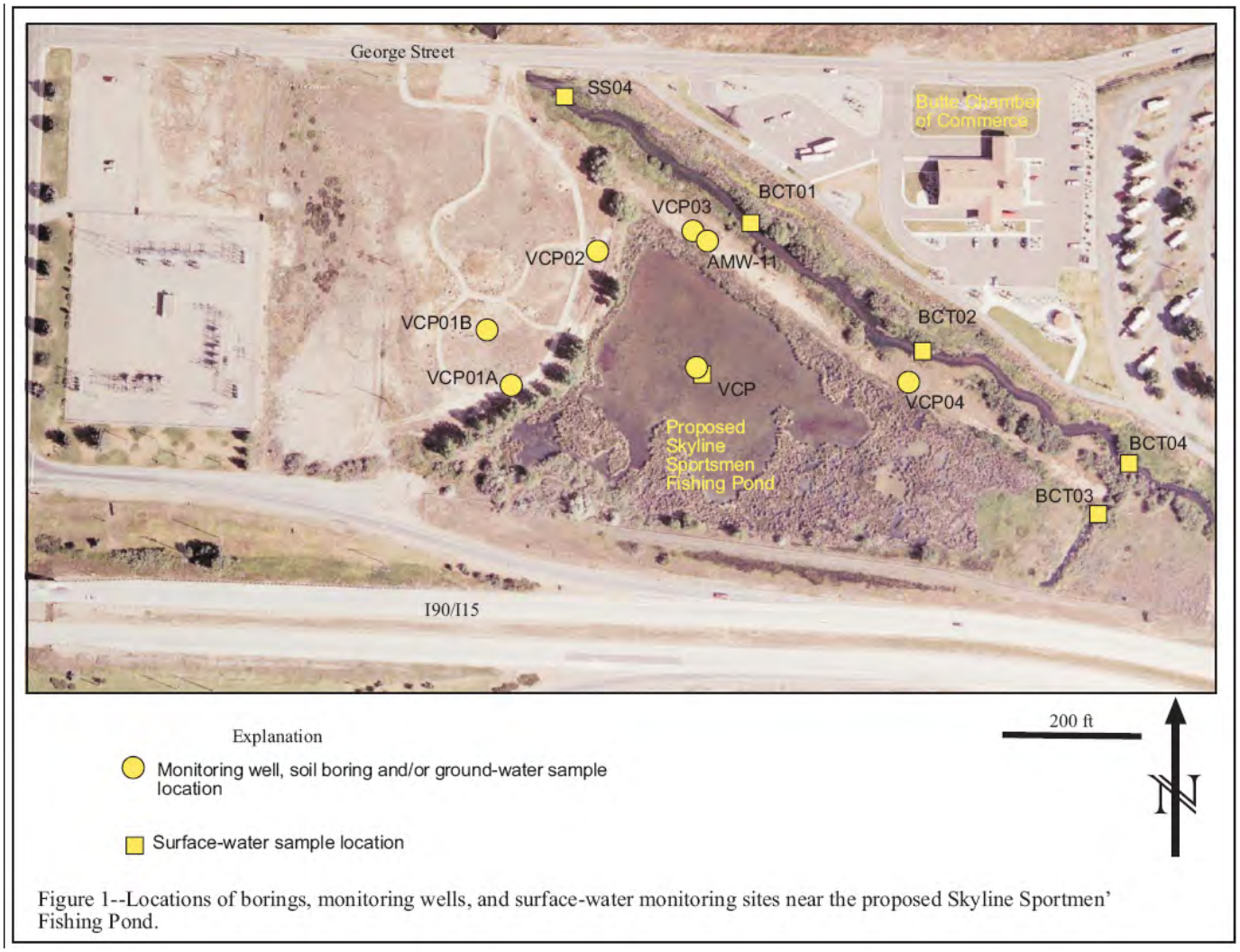
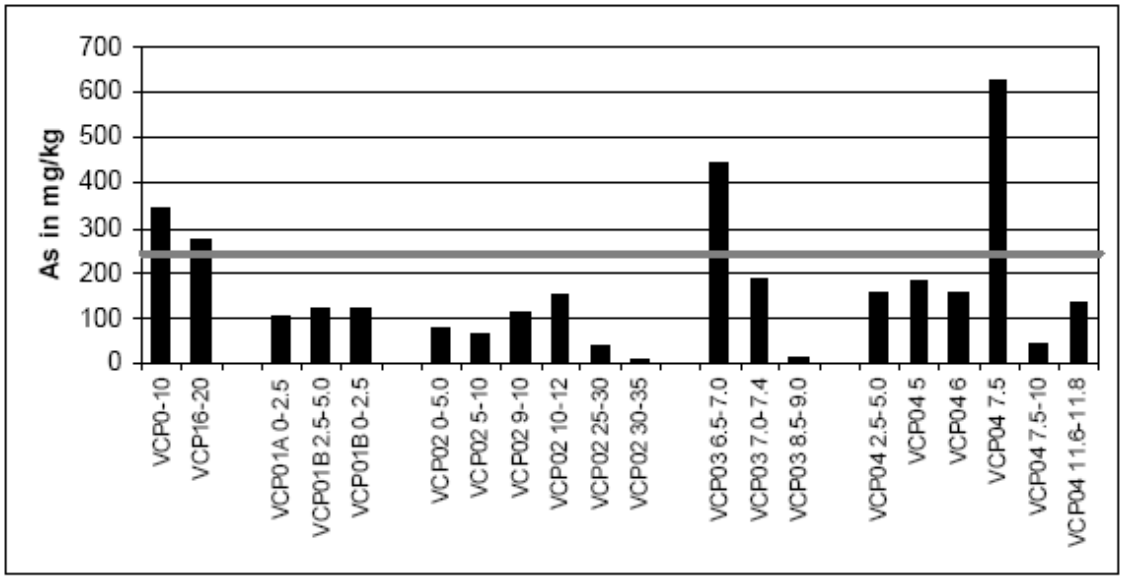


Figure 1--Locations of borings, monitoring wells, and surface-water monitoring sites near the proposed Skyline Sportmen' Fishing Pond.

Figures from Montana Bureau of Mines and Geology (MBMG) report for the Butte Skyline Sportsman's Association.

The Butte Skyline Sportsmen's Association oversaw the soil analysis for the site, and the Bureau of Mines and Geology (MBMG) performed the tests. Of the 20 soil samples collected from various locations throughout the BSB owned site location, four samples showed levels of arsenic (As) above the residential yard standard of 250 mg/kg, and three samples showed levels of lead (Pb) above the residential yard standard of 1250 mg/kg. This means that the excavated material at the site would have to be hauled to the repository near the Granite Mountain Memorial for disposal (Madison & Metesh, 2006). Transporting excavated material would increase the cost of constructing a fish pond at this location, especially with some of the material being contaminated. Figures 2 and 3 from the MBMG report, illustrate which samples exceeded the residential yard standard.



Arsenic levels in soil samples, from MBMG report

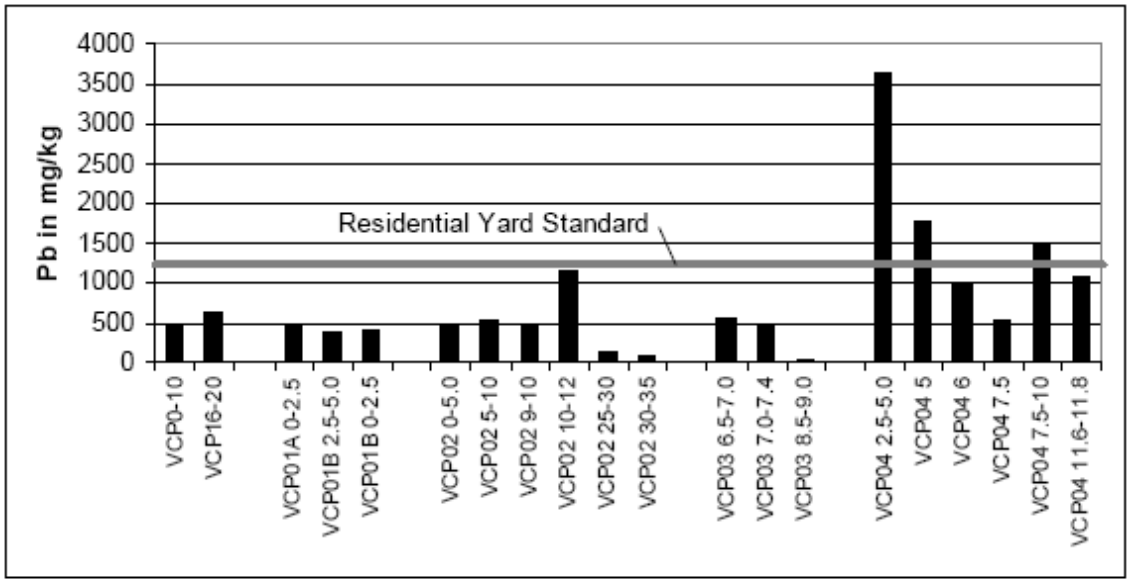


Figure 8: Lead levels in soil samples, from MGMG report.

The Butte Skyline Sportsmen's Association also collected water samples and submitted them to the MGMG for lab testing. The concentration of arsenic in the existing pond and well AMW-11 exceeded the drinking water standard of 10 ug/l. None of the samples exceeded aquatic life standards (Madison & Metesh, 2006). Because the levels of arsenic exceeded the human health standard, this contamination could be a potential issue, especially since BSB plans to construct a kid's fishing pond. Kids tend to not think through the repercussions of drinking from a pond. Even though the arsenic levels only slightly exceeded the acceptable limits, this could still be a liability for BSB should they

decide to construct the kid's fishing pond in this location. Table 1 below provides the specifics of each water sample tested.

Sample Id and Location	As (ug/l)	Cd (ug/l)	Cu (ug/l)	Pb (ug/l)	Zn (ug/l)
BLACKTAIL CREEK * AT USGS GAGE 12323240 (SS-04)	2.77	<1	<2	<2	15.8
BLACKTAIL CREEK * 300 FT UPSTREAM FROM SS-04	2.76	<1	<2	<2	11.5
BLACKTAIL CREEK * 650 FT UPSTREAM FROM SS-04	2.43	<1	<2	<2	11.3
UNNAMED TRIBUTARY TO BLACKTAIL CREEK * 1020 FT UPSTREAM FROM SS-04	9.68	<1	<2	<2	6.8
BLACKTAIL CREEK * 1035 FT UPSTREAM FROM SS-04	1.86	<1	<2	<2	11.3
POND*500 FT SOUTH OF VISITOR CENTER	11.7	<1	2.54	<2	64.5
WELL VCP-02	5.96	<1	<2	<2	16.6
Well ARCO/AMW-11	14.6	<1	<2	<2	83.8
WELL VCP-04	5.38	<1	<2	<2	89.5

Figure 9: Water sample tests collected and results, from MBMG report.

Reference:

Madison, J.P., Metesh, J.J., 2006. Ground-Water, Surface-Water, and Soil Sampling at a Proposed Fishing Pond near Blacktail Creek. Butte, Montana. Report prepared for Butte Skyline Sportsmen's Association by Montana Bureau of Mines and Geology.

APPENDIX C
Sisters of Charity Well Logs

MONTANA WELL LOG REPORT

Plot this site on a topographic map

Site Name: CONTINENTAL GARDENS
GWIC Id: 192342
DNRC Water Right:

Section 1: Well Owner

Owner Name

CONTINENTAL GARDENS

Mailing Address

100 GARDENS WAY

City	State	Zip Code
BUTTE	MT	59701

Section 2: Location

Township	Range	Section	Quarter Sections
03N	07W	28	NW¼ NW¼

County **Geocode**

SILVER BOW

Latitude	Longitude	Geomethod	Datum
45.988028	112.484376	TRS-SEC	NAD83

Section 3: Proposed Use of Water

DOMESTIC (1)

Section 4: Type of Work

Drilling Method: CABLE

Section 5: Well Completion Date

Date well completed: Monday, August 06, 2001

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
0	113	8

Casing

From	To	Diameter	Wall	Pressure	Joint	Type

Section 7: Well Test Data

Total Depth: 113
Static Water Level: 73
Water Temperature:
Bailer Test *
25 gpm with _ feet of drawdown after 2 hours.
Time of recovery 0.03 hours.
Recovery water level 73 feet.
Pumping water level 100 feet.

** During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.*

Section 8: Remarks

Section 9: Well Log

Geologic Source

Unassigned

From	To	Description
0	3	TOPSOIL
3	62	FINE NO40-NO200
62	81	COBBLES
81	101	GRAVELS AND FINE LIGHT BROWN
101	113	GRAVELS SAND AND WATER

Driller Certification

			Thickness	Rating		
-2	113	8				STEEL
5	113	4				PVC

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
95	111	4			FACTORY SLOTTED PVC

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name:
Company: OKEEFE
License No: WWD-29
Date Completed: 8/6/2001

MONTANA WELL LOG REPORT

Other Options

Plot this site on a topographic map

Site Name: POMROY TOME
GWIC Id: 149318

Section 1: Well Owner

Owner Name

POMROY TOM

Mailing Address

218 EXCELSIOR BUTTE MT 59701

Section 2: Location

Township	Range	Section	Quarter Sections
03N	07W	28	NE¼ NW¼

County **Geocode**

SILVER BOW

Latitude	Longitude	Geomethod	Datum
45.988028	112.479139	TRS-SEC	NAD83

Section 3: Proposed Use of Water

DOMESTIC (1)

Section 4: Type of Work

Drilling Method: ROTARY

Section 5: Well Completion Date

Date well completed: Thursday, October 07, 1993

Section 6: Well Construction Details

There are no borehole dimensions assigned to this well.

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
0	20	6				STEEL
25	205	4				PVC

Completion (Perf/Screen)

Section 7: Well Test Data

Total Depth: 205
Static Water Level: 60
Water Temperature:

Air Test *

20 gpm with drill stem set at _ feet for 1.5 hours.
Time of recovery _ hours.
Recovery water level _ feet.
Pumping water level 60 feet.

** During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.*

Section 8: Remarks

Section 9: Well Log

Geologic Source

Unassigned

From	To	Description
0	5	TOPSOIL
5	55	SAND & MUD
55	205	BROKEN ROCK & WATER

Driller Certification

From	To	Diameter	# of Openings	Size of Openings	Description
165	205	4			SAW SLOTS

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	20	BENTONITE	

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name:
Company: OKEEFE
License No: WWC-462
Date Completed: 10/7/1993

WATER & ENVIRONMENTAL TECHNOLOGIES

Consulting Scientists & Engineers
480 East Park
Suite 200
Butte, MT 59701

Phone: (406) 782-5220
Fax: (406) 723-1537

May 9, 2008

Cindy McIlveen
Butte Silver Bow Planning Department
155 W. Granite
Butte, MT 59701

RE: Surface Water Sample Results for Proposed Fish Pond Near Hillcrest School

Dear Cindy,

On February 25, 2008, I collected a surface water sample of water flowing from Reese Canyon to determine if the water was suitable for supplying a proposed fish pond near Hillcrest school. I attempted to sample surface water near Hillcrest; however, due to heavy ice and snow conditions, I was forced to sample the nearest location with open water, which was near Interstate 15. Figure 1 shows the sample location and the proposed fish pond site.

The analytical results are in Table 1. The low metals and nutrient concentrations shown in Table 1 indicate the water is clean and can be used to supply the proposed fish pond.

Attached you will find the analytical results from MSE Laboratory.

Contact me if you have any questions.

Sincerely,

John Trudnowski, PE
Geological Engineer

Table 1. Hillcrest Fish Pond Surface Water Sample Results Collected on February 25, 2008

Sample Parameter	Sample Result	MDEQ Water Standard	MDEQ Water Standard Source
pH	7.07	6.5 – 8.5	A-1 Surface Water Classification
Specific Conductance	191 µS/cm	NA	No general surface water standard
Temperature	0.80 °C	NA	
Nitrate/Nitrite as N	0.215 mg/L	10.0 mg/L	Surface Water Human Health Standard (Circular DEQ-7)
Sulfate	32.3 mg/L	250 mg/L	EPA Secondary Contaminant Level (October 1999)
Ammonia as N	<0.25 mg/L	5.15	Chronic Ammonia Criterion based on pH = 7.1 and Temperature = 16 °C (Circular DEQ-7)
Dissolved Orthophosphate	<0.050 mg/L	NA	Nutrients which do not have a general surface water standard
Total Kjeldahl Nitrogen	0.15 mg/L	NA	
Total Phosphorus	0.076 mg/L	NA	
Total Arsenic	<1 µg/L	10 µg/L	Surface Water Human Health Standard (Circular DEQ-7)
Total Cadmium	<1 µg/L	5 µg/L	Surface Water Human Health Standard (Circular DEQ-7)
Total Copper	<1 µg/L	1,300 µg/L	Surface Water Human Health Standard (Circular DEQ-7)
Total Iron	< 10 µg/L	300 µg/L	EPA Secondary Contaminant Level (October 1999)
Total Lead	< 1 µg/L	15 µg/L	Surface Water Human Health Standard (Circular DEQ-7)
Total Manganese	< 1 µg/L	50 µg/L	EPA Secondary Contaminant Level (October 1999)
Total Zinc	< 1 µg/L	2,000 µg/L	Surface Water Human Health Standard (Circular DEQ-7)


AMHERST
CORNELL
GARDENS
BAYARD
STATE
FLORAL
EDWARDS
CONTINENTAL
PHILLIPS
INTERSTATE 15
INTERSTATE 15
SADDLE ROCK
EAST RIDGE
RSTATE 90
Legend
Feb 2008 Sample Point
Proposed Fish Pond Area
N
W
E
S
1 inch equals 200 feet
Feet
0
100
200
400
600
WATER & ENVIRONMENTAL TECHNOLOGIES, PC
Hillcrest Fish Pond
Sample Area
A&G Marketing
5/7/2008
FIGURE 1

Saturday, April 26, 2008

Analytical Laboratory

John Trudnowski
Water and Environmental Technologies
Moonlight Professional Building
480 East Park Street, Suite 200
Butte, MT 59701

RE: BSB FISH POND NEAR HILLCREST Work Order: 0802188

Dear John Trudnowski:

MSE Lab Services received 1 sample(s) on 2/25/2008 for the analyses presented in the following report.

Please find enclosed analytical results for the sample(s) received at the MSE Laboratory. Due to the failure of our ICP-MS, your sample was subcontracted to ANATEK Labs for ICP-MS analysis (see attached). In the meantime, we purchased a state-of-the-art Perkin Elmer Elan DRC ICP-MS, capable of much lower detection limits due to fewer interferences.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

Marcee Cameron

Marcee Cameron
Laboratory Director/ Chemist
406-494-7371

Enclosure

MSE Lab Services

Date: *26-Apr-08*

CLIENT: Water and Environmental Technologies
Lab Order: 0802188
Project: BSB FISH POND NEAR HILLCREST
Lab ID: 0802188-001

Client Sample ID: HILLCREST FISH POND
Collection Date: 2/25/2008 11:47:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qualifier	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY		**E300.0**				Analyst: **SW**
Nitrogen, Nitrate-Nitrite	0.215	0.050		mg/L	1	2/25/2008
Sulfate	32.3	0.500		mg/L	1	2/25/2008
NITROGEN: AMMONIA		**E350.2**				Analyst: **kgj/jh**
Nitrogen, Ammonia	ND	0.25		mg/L	1	3/14/2008
ORTHO PHOSPHOROUS		**E365.3**				Analyst: **KGJ**
Phosphorus, Dissolved Orthophosphate (As P)	ND	0.050	H	mg/L	1	4/24/2008
TOTAL KJELDAHL NITROGEN		**E351.2**				Analyst: **kgj/jh**
Nitrogen, Total Kjeldahl	0.15	0.15		mg/L	1	3/13/2008
TOTAL PHOSPHOROUS		**E365.4**				Analyst: **sw/kgj**
Phosphorus, Total (As P)	0.076	0.050		mg/L	1	3/7/2008

Review

Qualifiers:

H	Holding times for preparation or analysis exceeded	J	Analyte detected below the Reporting Limit
Limit	Instrument Reporting Limit	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit (MDL)		

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Butte, MT 59701
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MSE Analytical Laboratory
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Butte, MT 59701
Lab: 406-494-7334
Fax: 406-494-7230
labinfo@mse-ta.com

Date: 26-Apr-08
Report Date: 26-Apr-08

QA/QC SUMMARY REPORT

Client: Water and Environmental Technologies
Project: BSB FISH POND NEAR HILLCREST

Work Order: 0802188
BatchID: R6048

Analyte	Result	RL	Units	Spike Lvl	% Rec	Low Limit	High Limit	RPD	RPD Limit	Qualifier
Sample ID: ***LRB***			*Method:* ***E300.0***		*Batch ID:* ***R6048***			*Analysis Date:*	***2/25/2008***	
Nitrogen, Nitrate-Nitrit	ND	0.050	mg/L							
Sulfate	ND	0.500	mg/L							
Sample ID: ***LFB#1084 2/29/08***			*Method:* ***E300.0***		*Batch ID:* ***R6048***			*Analysis Date:*	***2/25/2008***	
Nitrogen, Nitrate-Nitrit	3.85	0.050	mg/L	4.000	96.4	90	110			
Sulfate	19.0	0.500	mg/L	20.00	95.2	90	110			
Sample ID: ***0802188-001BD***			*Method:* ***E300.0***		*Batch ID:* ***R6048***			*Analysis Date:*	***2/25/2008***	
Nitrogen, Nitrate-Nitrit	0.215	0.050	mg/L					0.0930	20	
Sulfate	32.5	0.500	mg/L					0.725	20	
Sample ID: ***0802188-001BLFM***			*Method:* ***E300.0***		*Batch ID:* ***R6048***			*Analysis Date:*	***2/25/2008***	
Nitrogen, Nitrate-Nitrit	3.97	0.050	mg/L	4.000	93.9	80	120			
Sulfate	50.0	0.500	mg/L	20.00	88.5	80	120			

Review

Qualifiers:
N/A Sample concentration is greater than 4*spike level
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

MSE Analytical Laboratory
P.O. Box 4078
200 Technology Way
Butte, MT 59701
Lab: 406-494-7334
Fax: 406-494-7230
labinfo@mse-ta.com

Date: 26-Apr-08
Report Date: 26-Apr-08

QA/QC SUMMARY REPORT

Client: Water and Environmental Technologies
Project: BSB FISH POND NEAR HILLCREST

Work Order: 0802188
BatchID: R6132

Analyte	Result	RL	Units	Spike Lvl	% Rec	Low Limit	High Limit	RPD	RPD Limit	Qualifier
Sample ID: ***LCS***			*Method:* ***E365.4***		*Batch ID:* ***R6132***			*Analysis Date:*	***3/7/2008***	
Phosphorus, Total (As	1.52	0.050	mg/L	1.360	112	80	120			
Sample ID: ***BLANK***			*Method:* ***E365.4***		*Batch ID:* ***R6132***			*Analysis Date:*	***3/7/2008***	
Phosphorus, Total (As	0.005	0.050	mg/L							J
Sample ID: ***0802064-016CD***			*Method:* ***E365.4***		*Batch ID:* ***R6132***			*Analysis Date:*	***3/7/2008***	
Phosphorus, Total (As	0.33	0.05	mg/L					0.744	20	
Sample ID: ***0802064-016CS***			*Method:* ***E365.4***		*Batch ID:* ***R6132***			*Analysis Date:*	***3/7/2008***	
Phosphorus, Total (As	1.36	0.05	mg/L	1.000	102	75	125			

Review

Qualifiers:

N/A	Sample concentration is greater than 4*spike level	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

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Date: 26-Apr-08
Report Date: 26-Apr-08

QA/QC SUMMARY REPORT

Client: Water and Environmental Technologies
Project: BSB FISH POND NEAR HILLCREST

Work Order: 0802188
BatchID: R6160

Analyte	Result	RL	Units	Spike Lvl	% Rec	Low Limit	High Limit	RPD	RPD Limit	Qualifier
Sample ID: ***LCS***			*Method:* ***E351.2***		*Batch ID:* ***R6160***			*Analysis Date:*	***3/13/2008***	
Nitrogen, Total Kjeldah	0.88	0.15	mg/L	1.035	85.2	80	120			
Sample ID: ***BLANK***			*Method:* ***E351.2***		*Batch ID:* ***R6160***			*Analysis Date:*	***3/13/2008***	
Nitrogen, Total Kjeldah	0.06	0.15	mg/L							J
Sample ID: ***0802208-002C-D***			*Method:* ***E351.2***		*Batch ID:* ***R6160***			*Analysis Date:*	***3/13/2008***	
Nitrogen, Total Kjeldah	ND	0.15	mg/L					0	20	
Sample ID: ***0802208-002C-S***			*Method:* ***E351.2***		*Batch ID:* ***R6160***			*Analysis Date:*	***3/13/2008***	
Nitrogen, Total Kjeldah	0.90	0.15	mg/L	1.035	86.6	75	125			

Review

Qualifiers:

N/A	Sample concentration is greater than 4*spike level	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

MSE Analytical Laboratory
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200 Technology Way
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labinfo@mse-ta.com

Date: 26-Apr-08
Report Date: 26-Apr-08

QA/QC SUMMARY REPORT

Client: Water and Environmental Technologies
Project: BSB FISH POND NEAR HILLCREST

Work Order: 0802188
BatchID: R6214

Analyte	Result	RL	Units	Spike Lvl	% Rec	Low Limit	High Limit	RPD	RPD Limit	Qualifier
Sample ID: ***LCS***			*Method:* ***E350.2***		*Batch ID:* ***R6214***			*Analysis Date:*	***3/14/2008***	
Nitrogen, Ammonia	1.24	0.25	mg/L	1.090	114	80	120			
Sample ID: ***BLANK***			*Method:* ***E350.2***		*Batch ID:* ***R6214***			*Analysis Date:*	***3/14/2008***	
Nitrogen, Ammonia	ND	0.25	mg/L							
Sample ID: ***0802145-020C-D***			*Method:* ***E350.2***		*Batch ID:* ***R6214***			*Analysis Date:*	***3/14/2008***	
Nitrogen, Ammonia	ND	0.25	mg/L					0	20	
Sample ID: ***0802145-020C-S***			*Method:* ***E350.2***		*Batch ID:* ***R6214***			*Analysis Date:*	***3/14/2008***	
Nitrogen, Ammonia	1.09	0.25	mg/L	1.000	109	75	125			
Sample ID: ***BLANK***			*Method:* ***E350.2***		*Batch ID:* ***R6214***			*Analysis Date:*	***3/14/2008***	
Nitrogen, Ammonia	ND	0.25	mg/L							
Sample ID: ***LCS***			*Method:* ***E350.2***		*Batch ID:* ***R6214***			*Analysis Date:*	***3/14/2008***	
Nitrogen, Ammonia	1.02	0.25	mg/L	1.090	93.6	80	120			
Sample ID: ***0802180-001A-D***			*Method:* ***E350.2***		*Batch ID:* ***R6214***			*Analysis Date:*	***3/14/2008***	
Nitrogen, Ammonia	ND	0.25	mg/L					0	20	
Sample ID: ***0802180-001A-S***			*Method:* ***E350.2***		*Batch ID:* ***R6214***			*Analysis Date:*	***3/14/2008***	
Nitrogen, Ammonia	0.93	0.25	mg/L	1.000	92.9	75	125			

Review

Qualifiers:
N/A Sample concentration is greater than 4*spike level
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

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Butte, MT 59701
Lab: 406-494-7334
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labinfo@mse-ta.com

Date: 26-Apr-08
Report Date: 26-Apr-08

QA/QC SUMMARY REPORT

Client: Water and Environmental Technologies
Project: BSB FISH POND NEAR HILLCREST

Work Order: 0802188
BatchID: R6519

Analyte	Result	RL	Units	Spike Lvl	% Rec	Low Limit	High Limit	RPD	RPD Limit	Qualifier
Sample ID: ***BLANK***			*Method:* ***E365.3***		*Batch ID:* ***R6519***			*Analysis Date:* ***4/24/2008***		
Phosphorus, Dissolve	ND	0.050	mg/L							
Sample ID: ***LCS***			*Method:* ***E365.3***		*Batch ID:* ***R6519***			*Analysis Date:* ***4/24/2008***		
Phosphorus, Dissolve	1.62	0.050	mg/L	1.608	101	80	120			
Sample ID: ***0803214-006F-D***			*Method:* ***E365.3***		*Batch ID:* ***R6519***			*Analysis Date:* ***4/24/2008***		
Phosphorus, Dissolve	ND	0.050	mg/L					0	20	UH
Sample ID: ***0803214-006F-S***			*Method:* ***E365.3***		*Batch ID:* ***R6519***			*Analysis Date:* ***4/24/2008***		
Phosphorus, Dissolve	1.16	0.050	mg/L	1.000	116	75	125			H

Review

Qualifiers:
N/A Sample concentration is greater than 4*spike level
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client: MSE TECHNOLOGY APPLICATIONS INC
Address: 200 TECHNOLOGY WAY
BUTTE, MT 59702
Attn: MARCEE CAMERON

Batch #: 080328027
Project Name: WET HILLCREST FISH POND

Analytical Results Report

Sample Number 080328027-001 **Sampling Date** 3/4/2008 **Date/Time Received** 3/28/2008 9:45 AM
Client Sample ID 1579-LRB **Sampling Time**
Matrix: Water

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Arsenic	ND	mg/L	0.001	4/9/2008	DMB	EPA 200.8	
Cadmium	ND	mg/L	0.001	4/10/2008	DMB	EPA 200.8	
Copper	ND	mg/L	0.001	4/9/2008	DMB	EPA 200.8	
Iron	ND	mg/L	0.01	4/9/2008	DMB	EPA 200.8	
Lead	ND	mg/L	0.001	4/10/2008	DMB	EPA 200.8	
Manganese	ND	mg/L	0.001	4/9/2008	DMB	EPA 200.8	
Zinc	ND	mg/L	0.001	4/9/2008	DMB	EPA 200.8	

Sample Number 080328027-002 **Sampling Date** 3/4/2008 **Date/Time Received** 3/28/2008 9:45 AM
Client Sample ID 1579-LFB **Sampling Time**
Matrix: Water

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Arsenic	0.0408	mg/L	0.001	4/9/2008	DMB	EPA 200.8	
Cadmium	0.00494	mg/L	0.001	4/10/2008	DMB	EPA 200.8	
Copper	0.262	mg/L	0.001	4/9/2008	DMB	EPA 200.8	
Iron	0.909	mg/L	0.01	4/9/2008	DMB	EPA 200.8	
Lead	0.0198	mg/L	0.001	4/10/2008	DMB	EPA 200.8	
Manganese	0.479	mg/L	0.001	4/9/2008	DMB	EPA 200.8	
Zinc	0.500	mg/L	0.001	4/9/2008	DMB	EPA 200.8	

Comments:

Anatek Labs, Inc.

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Client: MSE TECHNOLOGY APPLICATIONS INC
Address: 200 TECHNOLOGY WAY
BUTTE, MT 59702
Attn: MARCEE CAMERON

Batch #: 080328027
Project Name: WET HILLCREST FISH POND

Analytical Results Report

Sample Number 080328027-003 **Sampling Date** 3/4/2008 **Date/Time Received** 3/28/2008 9:45 AM
Client Sample ID 0802188-001A **Sampling Time**
Matrix: Water

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Arsenic	0.00567	mg/L	0.001	4/9/2008	DMB	EPA 200.8	
Cadmium	ND	mg/L	0.001	4/10/2008	DMB	EPA 200.8	
Copper	0.00870	mg/L	0.001	4/9/2008	DMB	EPA 200.8	
Iron	1.08	mg/L	0.01	4/9/2008	DMB	EPA 200.8	
Lead	0.00157	mg/L	0.001	4/10/2008	DMB	EPA 200.8	
Manganese	0.100	mg/L	0.001	4/9/2008	DMB	EPA 200.8	
Zinc	0.0149	mg/L	0.001	4/9/2008	DMB	EPA 200.8	

Sample Number 080328027-004 **Sampling Date** 3/4/2008 **Date/Time Received** 3/28/2008 9:45 AM
Client Sample ID 0802188-001A DUP **Sampling Time**
Matrix: Water

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Arsenic	0.00577	mg/L	0.001	4/9/2008	DMB	EPA 200.8	
Cadmium	ND	mg/L	0.001	4/10/2008	DMB	EPA 200.8	
Copper	0.00850	mg/L	0.001	4/9/2008	DMB	EPA 200.8	
Iron	1.09	mg/L	0.01	4/9/2008	DMB	EPA 200.8	
Lead	0.00155	mg/L	0.001	4/10/2008	DMB	EPA 200.8	
Manganese	0.103	mg/L	0.001	4/9/2008	DMB	EPA 200.8	
Zinc	0.0155	mg/L	0.001	4/9/2008	DMB	EPA 200.8	

Comments:

Anatek Labs, Inc.

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Client:	MSE TECHNOLOGY APPLICATIONS INC	**Batch #:**	080328027
Address:	200 TECHNOLOGY WAY BUTTE, MT 59702	**Project Name:**	WET HILLCREST FISH POND
Attn:	MARCEE CAMERON		

Analytical Results Report

Sample Number	080328027-005	**Sampling Date**	3/4/2008	**Date/Time Received**	3/28/2008	9:45 AM	
Client Sample ID	0802188-001A LFM	**Sampling Time**					
Matrix:	Water						

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Arsenic	0.0455	mg/L	0.001	4/9/2008	DMB	EPA 200.8	
Cadmium	0.00502	mg/L	0.001	4/10/2008	DMB	EPA 200.8	
Copper	0.262	mg/L	0.001	4/9/2008	DMB	EPA 200.8	
Iron	2.01	mg/L	0.01	4/9/2008	DMB	EPA 200.8	
Lead	0.0212	mg/L	0.001	4/10/2008	DMB	EPA 200.8	
Manganese	0.558	mg/L	0.001	4/9/2008	DMB	EPA 200.8	
Zinc	0.489	mg/L	0.001	4/9/2008	DMB	EPA 200.8	

Sample Number	080328027-006	**Sampling Date**	3/4/2008	**Date/Time Received**	3/28/2008	9:45 AM	
Client Sample ID	1579-LRB FILT	**Sampling Time**					
Matrix:	Water						

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Arsenic	ND	mg/L	0.001	4/9/2008	DMB	EPA 200.8	
Cadmium	ND	mg/L	0.001	4/10/2008	DMB	EPA 200.8	
Copper	ND	mg/L	0.001	4/9/2008	DMB	EPA 200.8	
Iron	ND	mg/L	0.01	4/9/2008	DMB	EPA 200.8	
Lead	ND	mg/L	0.001	4/10/2008	DMB	EPA 200.8	
Manganese	ND	mg/L	0.001	4/9/2008	DMB	EPA 200.8	
Zinc	ND	mg/L	0.001	4/9/2008	DMB	EPA 200.8	

Comments:

Anatek Labs, Inc.

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504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

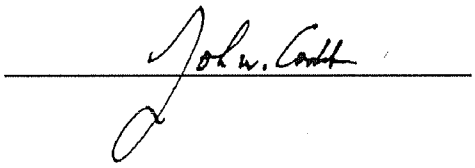
Client:	MSE TECHNOLOGY APPLICATIONS INC	**Batch #:**	080328027
Address:	200 TECHNOLOGY WAY BUTTE, MT 59702	**Project Name:**	WET HILLCREST FISH POND
Attn:	MARCEE CAMERON		

Analytical Results Report

Sample Number	080328027-007	**Sampling Date**	3/4/2008	**Date/Time Received**	3/28/2008 9:45 AM
Client Sample ID	1579-LFB FILT	**Sampling Time**			
Matrix:	Water				

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Arsenic	0.0394	mg/L	0.001	4/9/2008	DMB	EPA 200.8	
Cadmium	0.00494	mg/L	0.001	4/10/2008	DMB	EPA 200.8	
Copper	0.256	mg/L	0.001	4/9/2008	DMB	EPA 200.8	
Iron	0.927	mg/L	0.01	4/9/2008	DMB	EPA 200.8	
Lead	0.0200	mg/L	0.001	4/10/2008	DMB	EPA 200.8	
Manganese	0.465	mg/L	0.001	4/9/2008	DMB	EPA 200.8	
Zinc	0.479	mg/L	0.001	4/9/2008	DMB	EPA 200.8	

Authorized Signature



MCL	EPA's Maximum Contaminant Level
ND	Not Detected
PQL	Practical Quantitation Limit

Comments:

BSB Kids Fishing Pond
Site Investigation Cost Estimate

March 21, 2008

This cost estimate includes labor and subcontractor costs to complete a site investigation east of Hillcrest School to determine available water resources for a kid's fish pond.

WET labor for initial piezometer installation. Includes labor to log boreholes, collect soil and water samples, measure ground water levels, and provide subcontractor oversight

Personnel	Quantity	Unit	Unit Cost	Cost
Senior Engineer	12	Hour	$80.00	$960.00
Water tape	2	Days	$25.00	$50.00
Water quality meter	2	Days	$80.00	$160.00
Sampling Supplies	1	Each	$20.00	$20.00
				$1,190.00

Geoprobe Subcontractor - includes labor and materials to install six piezometers, and collect core samples from selected borehole down to 20 feet. See attached cost estimate.

Personnel	Quantity	Unit	Unit Cost	Cost
Enviroprobe Services Labor	1	Each	$1,680.00	$1,680.00
Materials	1	Each	$1,027.39	$1,027.39
Travel	1	Each	$174.00	$174.00
				$2,881.39

WET labor to perform monthly monitoring of ground water levels, and surface water flows; in addition, quarterly samples of surface water and ground water will be collected. Assumes monitoring would last 12 months

Personnel	Quantity	Unit	Unit Cost	Cost
Senior Engineer (4 hours/month)	48	Hour	$80.00	$3,840.00
Water tape	12	Days	$25.00	$300.00
Water quality meter	12	Days	$80.00	$960.00
Marsh-McBirney flow meter	12	Days	$50.00	$600.00
Sampling Supplies	12	Each	$20.00	$240.00
				$5,940.00

MSE lab fees - includes fees for analyzing 5 soil samples and two water samples from initial piezometer installation and eight water samples from the long term monitoring. See attached cost estimate.

Personnel	Quantity	Unit	Unit Cost	Cost
Soil Samples	5	Each	$99.00	$495.00
Water Samples	10	Each	$199.00	$1,990.00
				$2,485.00

TOTAL COST	***$12,496.39***
WET in-kind services donation = 25% of total WET labor	***$1,782.50***
MSE in-kind services donation = 15% of total analytical cost	***$372.75***
ESTIMATED COST =	***$10,341.14***

Enviroprobe Services estimate

BSB Kid's Fish Pond

Labor	Unit Cost	Units		Cost
Geoprobe	$140.00	12	Hour	$1,680.00
			Labor total =	*$1,680.00*

Materials	Unit Cost	Units/hole	Holes	Cost
Core liners	$5.00	5	1	$25.00
Ex tips	$12.00	1	6	$72.00
Sand	$10.90	1	6	$65.40
Bentonite	$7.25	0.5	6	$21.75
Concrete	$5.35	1	6	$32.10
Wellhead cover	$52.90	1	6	$317.40
Well screen	$19.85	3	6	$357.30
PVC riser	$11.39	1	6	$68.34
Bottom cap	$9.35	1	6	$56.10
Slip cap	$2.00	1	6	$12.00
			Materials total =	*$1,027.39*

Travel	Unit Cost	Units		Cost
Mileage	$1.45	120	miles	$174.00
			Travel total =	*$174.00*

Total Cost = ***$2,881.39***

MSE Lab Services
P.O. Box 4078
Butte, MT 59702
TEL: *(406) 494-7334* FAX: *(406) 494-7128*

21-Mar-08

QUOTATION for ANALYTICAL SERVICES

Quote: 126

Company: Water and Environmental Technologies

Contact: John Trudnowski
Address: Moonlight Professional Building
480 East Park Street, Suite 200
Butte, MT 59701
Phone: (406) 490-2918 Fax: (406) 782-1537

Project: FISH POND
TAT: 10 working days
QC Level:

Submitted By:

Marcee Cameron

Quote Expires: 12/31/2008

Test Name	Matrix	Test	Remarks	# Samp	Unit Price	Test Total
ANIONS by ION CHROMATOGRAPHY	Aqueous	E300.0	NO3/NO2, SO4	1	$25.00	$25.00
ICP-MS METALS, SOLID SAMPLES	Solid	SW6020	SOIL-As,Cd,Cu,Pb,Zn,Fe,Mn	1	$84.00	$84.00
SW-846 ICP-MS METALS, TOTAL	Aqueous	SW6020A	AQ-As,Cd,Cu,Pb,Zn,Fe,Mn	1	$84.00	$84.00
NITROGEN: AMMONIA	Aqueous	E350.2		1	$15.00	$15.00
MODIFIED E200.2 PREP	Aqueous	E200.2	AQ PREP	1	$15.00	$15.00
SW846 METHOD 3050B PREP - ICPMS	Solid	SW3050B	SOIL PREP	1	$15.00	$15.00
ORTHO PHOSPHOROUS	Aqueous	E365.3		1	$10.00	$10.00
TOTAL KJELDAHL NITROGEN	Aqueous	E351.2		1	$25.00	$25.00
TOTAL PHOSPHOROUS	Aqueous	E365.4		1	$25.00	$25.00

Sub total:	$298.00
Misc:	$0.00
Discount:	15.00%
TOTAL:	**$253.30**

Misc Comments:

Comments: Total cost for 5 soil samples is $495.00. Total cost for 10 aqueous samples is $1990.00.

2008
Parks/Recreation Board Meeting
Tuesday, February 27, 2008
Civic Center 4:30PM

The Parks and Recreation Board and Ad Hoc members of the comprehensive Parks and Recreation Master Plan Committee held a Public Relations Strategy Meeting on February 27, 2008 at 4:30PM.

During that meeting the Board called a special meeting:

A motion was made by Carol Biggers, seconded by Kelly Ferriter-to give it's approval to the Skyline Sportsman Association and BSB to seek funding sources for a kids/children's fishing pond east of the Hillcrest School area.

Motion Seconded, Carried to Accept

In other discussions concerning the Granite Mountain/Mountain Con development, a motion was made supporting a location of a walking trail. Motion made by Kelly Ferriter seconded by Carol Biggers to approve a trail location change in Phase # 1 of the Granite Mountain Memorial Interpretative Area in a formal communication to EPA.

Motion Seconded, Carried to Accept

Skyline Sportsmen's Association, Inc.

Box 173 Butte, Montana 59703

February 19, 2008

Butte Silver Bow
Parks and Recreation Department
155 West Granite Street
Butte, MT 59701

Dear Parks and Recreation Department,

Skyline Sportsmen's Association would like to express our concern of the future plans and development of Butte Silver Bow property located just east of NCAT and Hillcrest school.

The Skyline Sportsmen's Association has been trying to develop a location for a kid's fishing pond in Butte to provide Butte's children a park and fishing pond that is easily accessible by foot or bike. Skyline has been working with Cindy McIlveen of the Planning Department on finding a suitable location. We have investigated the potential of four different sites within Butte. With help from Montana Tech and the Bureau of Mines, we have determined the best location for a park and fishing pond would be the Butte Silver Bow property located just east of NCAT and Hillcrest school.

The Skyline Sportsmen's Association is currently working with Cindy McIlveen to pursue grant money to develop and maintain the park and kid's pond. Support from the Butte Silver Bow, the general public, and the Parks and Recreation Department is crucial to this project, so we ask the Parks and Recreation Department to support developing the property east of NCAT and Hillcrest school as a park and kid's fishing pond.

Attached you will find a report completed by Montana Tech for Cindy McIlveen outlining the best suitable location for the kid's fishing pond.

Sincerely,

John Trudnowski
Member of the Board of Directors
Skyline Sportsmen's Association